American Archaeology
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ON DE SOTO’S TRAIL • PROVING PRE-CLOVIS SITES • SPIRO MOUNDS RECONSIDERED

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The most important events in the European conquest of what is now the United States were the expeditions of de Soto and Coronado. At about the same time (1539-1543) these intrepid conquerors blazed trails throughout much of the country, leaving behind a path of death and destruction among the Natives. De Soto went from Florida through the Southeastern United States into Texas, and subsequently the expedition’s survivors exited down the Mississippi River. Coronado’s entrada crossed the American Southwest and got as far east as central Kansas, only a few hundred miles from de Soto’s deepest penetration of the continent.

Despite years of study and informed speculation as well as contemporary chronicles, we are still unsure of either route and of all the places they visited. In this issue of *American Archaeology* (see “Searching For De Soto,” page 33) we examine the formidable problems involved in determining de Soto’s route. This is a mystery archaeology can and should solve. If only archaeologists can locate Mabila, the site in Alabama of de Soto’s most destructive battle, and Casqui, the first settlement he encountered west of the Mississippi, the rest of the route should fall into place. Casqui is probably Parkin State Archaeological Park in Arkansas, but only more excavations can prove it. The location of Mabila is more difficult. New excavations are badly needed to determine both locations, and a systematic search is likely to yield dramatic results.

Meanwhile, in Albuquerque, archaeologists are using remote sensing technology to find Coronado’s metal artifacts, which helps them identify the pueblos his army occupied and sacked. This kind of technology could also be a big help along de Soto’s route. By preserving some of the most important sites along both routes, the Conservancy is playing a key role in this great search for a critical part of our nation’s history.

Mark Michel, President
Editor’s Corner

I’ve been told that Miami is a young city that has little sense of its history; that it’s focused on development, not preservation. That may be, but I’ve noticed that, from time to time, when developers butt heads with preservationists there, the latter stand their ground.

The two sides have been confronting each other in downtown Miami, where roughly 1,500 years ago a Tequesta village stood. (See “An Echo of the Miami Circle,” page 39.) The developer wants to erect a mixed-use complex that will help reinvigorate that section of downtown, while the preservationists want the construction project stopped, or significantly altered to minimize its impact on the remains of the ancient village.

This confrontation has featured insults, animated public hearings, a rejection of the developer’s plan, an appeal of that rejection, and a lawsuit to reject an agreement that resolved the whole thing. In a word, it’s gotten heated.

In 2001 I covered a similar confrontation that took place over the Miami Circle, an ancient ceremonial feature that is thought to be part of the Tequesta village. Many people were surprised that the preservationists won that one, and the circle remains intact. This time it appears that some of the village site will be preserved, but a significant part of it will not. That’s not the outcome many preservationists hoped for, but nonetheless they’ve proven that many Miamians do indeed care about their history.

Robert R. Dykstra
Worcester, Massachusetts

A Disappointing Omission

I was disappointed David Malakoff’s article (“Holy Smoke,” Summer) did not mention the pipes from Pipestone, Minnesota. Across the Great Plains stories of the pipestone are passed down through generations by the Sioux, Crow, Blackfoot, and Pawnee. Two-thousand-year-old stone pipes were long known among the Indians from as far away as Mound City, Ohio.

The durable, but soft Catlinite ranges in color from mottled pink to brick red. It is found beneath layers of quartzite rock near Pipestone, Minnesota. The quarry is sacred ground and can only be quarried by American Indians enrolled in a tribe. The distinct Sioux calumet shape was used for a peace pipe.

Betty Stover
Huron, Tennessee

Happy Travels

Thank you very much for the Summer travel story “On the Trail of Florida’s Indian Heritage.” With the descriptions, map, and sequence of destinations, the article makes for a pleasant and accessible exploration of Florida’s past. Kudos to writer Susan Ladika. I am broadcasting out that wonderful article.

Bonita Lee
Plantation, Florida

Details About the Cover

I loved the cover of the Summer issue, but thought we readers deserved more information than the caption provided. I found out that the portrait is of a Hidatsa man from the upper Missouri River named Pehiska Ruhpa, painted in 1834. His pipe bowl is from Minnesota, circled by German silver inlays. The five-foot-long wooden stem, decorated by brass tacks, beadwork, and hanks of dyed hair, is really unusual. I’ve only seen a picture of one other like it, carried by an Ottawa man pictured in about 1700.

Robert R. Dykstra
Worcester, Massachusetts

I’m an Ottawa man and my pipe was a bit more elaborate than the one described. It had a five-foot-long stem decorated with brass tacks, beadwork, and hanks of dyed hair. I’ve only seen a picture of one other, carried by a Hidatsa man. It’s a bit unusual, but I’m sure it’s a great example of Ottawa craftsmanship.

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Sending Letters to American Archaeology

American Archaeology welcomes your letters. Write to us at 1717 Girard Blvd. NE, Albuquerque, NM 87106, or send us e-mail at tacmag@nm.net.

We reserve the right to edit and publish letters in the magazine’s Letters department as space permits. Please include your name, address, and telephone number with all correspondence, including e-mail messages.
The Archaeological Conservancy is the only national nonprofit organization that identifies, acquires, and preserves the most significant archaeological sites in the United States. Since its beginning in 1980, the Conservancy has preserved more than 475 sites across the nation, ranging in age from the earliest habitation sites in North America to a 19th-century frontier army post. We are building a national system of archaeological preserves to ensure the survival of our irreplaceable cultural heritage.

Why Save Archaeological Sites?
The ancient people of North America left virtually no written records of their cultures. Clues that might someday solve the mysteries of prehistoric America are still missing, and when a ruin is destroyed by looters, or leveled for a shopping center, precious information is lost. By permanently preserving endangered ruins, we make sure they will be here for future generations to study and enjoy.

How We Raise Funds:
Funds for the Conservancy come from membership dues, individual contributions, corporations, and foundations. Gifts and bequests of money, land, and securities are fully tax deductible under section 501(c)(3) of the Internal Revenue Code. Planned giving provides donors with substantial tax deductions and a variety of beneficiary possibilities. For more information, call Mark Michel at (505) 266-1540.

The Role of the Magazine:
American Archaeology is the only popular magazine devoted to presenting the rich diversity of archaeology in the Americas. The purpose of the magazine is to help readers appreciate and understand the archaeological wonders available to them, and to raise their awareness of the destruction of our cultural heritage. By sharing new discoveries, research, and activities in an enjoyable and informative way, we hope we can make learning about ancient America as exciting as it is essential.

How to Say Hello: By mail: The Archaeological Conservancy, 1717 Girard Boulevard NE, Albuquerque, NM 87106; by phone: (505) 266-1540; by e-mail: mbawaya@americanarchaeology.com; or visit our Web site: www.americanarchaeology.org

You can also follow us on Facebook.
NEW EXHIBITS

Maxwell Museum of Anthropology
University of New Mexico, Albuquerque, N.M.—In partnership with the Ahtna Heritage Foundation of Alaska, the new exhibit “Archaeology on Ice” showcases unique archaeological materials discovered in melting ice patches at Alaska’s Wrangell-Saint Elias National Park and Preserve. The exhibit is the culmination of a 10-year research project that has included collaborative fieldwork and interpretive support from the local Ahtna community. Spectacular artifacts found on ice patches include ancient hunting tools, a birch bark basket, and a variety of historic objects. (505) 277-4405, http://maxwellmuseum.unm.edu (October 3-March 2015)

Mount Calvert Historical and Archaeological Park
Upper Marlboro, Md.—Mount Calvert is one of the most significant historical and archaeological sites in Prince George’s County. Its rich archaeological and historical resources represent over 8,000 years of human culture and offer visitors a chance to see history being discovered during an active excavation. Come see archaeologists uncover an early colonial town, and an 18th- and 19th-century Prince George’s County tobacco plantation. The results of earlier excavations can be seen in the permanent exhibit “A Confluence of Three Cultures.” (301) 627-1286, http://history.pgparks.com/sites_and_museums/Mount_Calvert_Historical_and_Archaeological_Park (Permanent exhibit)

South Florida Museum
Bradenton, Fla.—“The Montague Talent Collection of Florida’s First Peoples Artifacts” became the founding collection of the South Florida Museum in 1946. At the time of his death in 1962, collector Montague Tallant had explored over 169 sites in Florida and amassed one of the world’s most comprehensive private collections of artifacts from the state’s earliest occupants. Most of Tallant’s collecting was done in the 1930s, and he amassed more than 5,000 items, including pottery dating back to A.D. 300; metal, bead, and shell artifacts, and stone tools. (941) 746-4131, www.southfloridamuseum.org (Long-term exhibit)

Aztec Ruins National Monument and Salmon Ruins Museum
Aztec and Bloomfield, N.M.—The new interactive computer exhibit “Chaco’s Legacy: Ancient Migration in the Pueblo World” brings Puebloan society to life in a virtual guided tour spanning hundreds of years. Powered by interactive gaming technology, a new touch-screen experience developed by the non-profit organization Archaeology Southwest lets visitors explore the rise and spread of a powerful ancient Southwestern Pueblo society in northwestern New Mexico’s remote Chaco Canyon. Users can tour part of the Chacoan world through time and space, interactively exploring eight monumental
pueblos, several small villages, some pueblo room interiors, two ceremonial spaces, and hundreds of ancient objects, all dating between about A.D. 850 and 1200. The exhibit can be seen at both the Aztec and Salmon locations. Aztec Ruins (505) 334-6174 x230, www.nps.gov/azru/index.htm. Salmon Ruins (520) 632-2013, www.salmonruins.com (Long-term exhibit)

**CONFERENCES, LECTURES & FESTIVALS**

**Annual Symposium of the Pre-Columbian Society of Washington, D.C.**
September 20, U.S. Navy Memorial and Naval Heritage Center, Washington, D.C. This year’s symposium “Land Without Borders: Cultural Interaction between the Pre-Hispanic Southwest and Mesoamerica” will examine evidence for cultural exchange and interaction between the peoples of ancient Mesoamerica and the American Southwest. www.pcswdc.org/annual_symposium.php

**Midwest Archaeological Conference**
October 2-4, Hilton Garden Inn Conference Center, Champaign, Illinois. This year’s joint meeting of the Midwest Archaeological Conference (MAC) and the Illinois Archaeological Survey will be hosted by the Illinois State Archaeological Survey/Prairie Research Institute. In addition to the numerous cutting edge symposia, papers, and poster presentations, there will be a banquet on Saturday evening featuring guest speaker Martin Carver of York University, in the United Kingdom. For more information, contact Eve Hargrave at e.hargrav@illinois.edu, or go to www.midwestarchaeology.org.

**Mogollon Archaeology Conference**
October 9-11, Corbett Center Auditorium, New Mexico State University, Las Cruces. Sponsored by NMSU, the conference will feature papers and presentations relating to the archaeology of the Mogollon region in the broadest sense, including Northern Chihuahua, Jornada, and the Mogollon Rim areas. For more information, contact Lonnie Ludeman at Icludeman@zianet.com, (575) 522-1691, or go to www.archaeological.org/events/15573?page=1

**Utah Rock Art Research Association Symposium**
October 10-13, Kanab, Utah. The symposium features papers that focus on the Kanab area and southwestern Utah. The papers cover a broad range of subjects, especially those that bring historic understanding to rock art studies, heighten the experience of visiting rock art, and report on rock art preservation projects and issues. There will also be field trips to local sites. www.utahrockart.org/symposium

**Shawnee Indian Mission Fall Festival**
October 11-12, Shawnee Indian Mission State Historic Site, Fairway, Kans. The 26th annual festival will feature living history re-enactors, mountain men, native dancers, spinners, weavers, blacksmith, musicians, traditional craftsmen, pony rides, tipis, food, and a quilt show. (913) 262-0867, www.kshs.org/event/shawnee-indian-mission-fall-festival/15875

**Great Basin Anthropological Conference**
October 15-18, The Riverside Hotel, Boise, Idaho. This year’s 34th biennial conference will focus on the theme “transitions,” which reflects the changes to the perspectives and practices of Great Basin anthropology over the last 60 years. The conference will offer opportunities to explore these transitions by sharing new data and concepts and reflecting on previous knowledge and interpretation. www.gbac.whsites.net.

**South-Central Conference on Mesoamerica**
October 24-26, Tulane University, New Orleans, La. The annual conference is a multi-disciplinary event that aims to present current research on art history, archaeology, and other subfields of anthropology within the geographic region of Mesoamerica, and provides a venue for scholars, students, and the public from the south-central U.S. to share ideas, information, and interpretations. This year’s keynote speaker will be John Watanabe of Dartmouth. To register, contact the organizers at sccmconference@gmail.com, or go to www.southcentralmeso.org

**Museum of Man’s Rock Art Symposium**
November 1, San Diego Museum of Man, Calif. This day-long event offers participants the opportunity to share the results of rock art research from around the globe. (619) 239-2001, or www.museumofman.org/rockart

**Southeastern Archaeological Conference**
November 12-15, Hyatt Regency Greenville, Greenville, S.C. Organized by the South Carolina Institute of Archaeology and Anthropology, this year’s conference includes paper and poster presentations, and symposia, as well as guided field trips to local sites. To register, contact Charlie Cobb at cobbcr@mailbox.sc.edu, or go to www.southeasternarchaeology.org

**New York State Museum**
Albany, N.Y.—“Beneath the City: An Archaeological Perspective of Albany” presents the fascinating results of several recent archaeological excavations in Albany, one of the oldest European cities in North America. The exhibit includes artifacts related to the early Dutch settlement, an 18th century rum distillery, 18th- and 19th-century waterfront structures, the city’s expansion from the initial settlement, and the daily life of past residents. (518) 474-5877, www.nysm.nysed.gov/exhibits (Long-term exhibit)
Ancient Southwest Baby Boom

Study shows high birth rates in the northern Southwest.

Archaeologist Timothy Kohler and graduate student Kelsey Reese, both with Washington State University, recently published a study mapping the nearly 800-year-long baby boom that characterized the northern Southwest between about A.D. 500 and 1300. The study, which was published in the Proceedings of the National Academy of Sciences, used data from thousands of human remains recovered from hundreds of sites across the Southwest over the past century.

“Population size has an enormous effect on many aspects of human existence, so trying to reconstruct how that changes through time is one of archaeology’s central tasks,” said Kohler. “I was inspired when about a decade ago I read an article by French demographer Jean-Pierre Bocquet-Appel, who had developed a technique for estimating birth rates from skeletal assemblages. With some colleagues and graduate students, I applied his approach to the Southwest in a pilot study published in 2008. It seemed to work well, but we knew we could enlarge our sample and improve our estimates. This new article is the result.”

The study reports that the rise in birth rates, which accompanied the introduction of cultivated plants and animals in the Southwest, was slow to emerge and was marked by considerable regional variability in birth rate. Once the boom took hold, birth rates for the northern Southwest exploded.

“One thing that surprised me is how very high some of our calculated birth rates are, especially in the period between about A.D. 500 and 1000,” said Kohler. “They are as high, or possibly even higher, than birth rates in the portions of the world (Africa) with the highest current rates.”

By the mid-1100s, drought hit the Southwest and the region likely reached its carrying capacity, but birth rates generally remained high until the region was depopulated by the end of the 13th century.

Another surprise was that areas like the Sonoran Desert and Tonto Basin (around what is now Phoenix) where irrigation was important, saw lower birth rates than areas where people depended on rainfall to water their fields, for example in the Mesa Verde region of southwestern Colorado. “Frankly, I expected the opposite, because irrigation is supposed to make agriculture so dependable,” he said. Kohler suspected that inhabitants of irrigated areas would have had difficulty expanding their farmlands, since they required irrigation, but for the rainfall farmers, groups could continue to expand into new areas so long as climates permitted.

“Knowing something about birth rates and life expectancies tells us a lot about how people in the past experienced their lives,” Kohler said. “Now that we have estimates of these rates, the next step will be to use them to estimate population sizes through time.” — Tamara Stewart

The researchers studied human remains data from hundreds of sites, including Mesa Verde.
Having examined the popular theory that human-caused deforestation in and around Chaco Canyon led to ecological disaster and social collapse, a team of University of New Mexico (UNM) archaeologists recently concluded that there is no evidence to support it. Their study, which was published in the Proceedings of the National Academy of Sciences, summarizes different lines of evidence for the argument that deforestation in Chaco Canyon, which resulted from the construction of the canyon’s massive great houses, caused the erosion of agricultural fields. The loss of agriculture forced the Anasazi to develop exchange systems for importing food, eventually resulting in the collapse of the canyon population during a major drought in the A.D. 1100s.

Working in collaboration with the National Park Service, which owns the site, the UNM archaeologists have been researching Chaco to better understand the historical role of food production and the economic system that supported the canyon society. “We are working to understand farming, and we needed to know how the presumed destruction of fields might have affected Chaco Canyon residents,” said Wirt Wills, one of the archaeologists. “We did not begin with any presumptions about whether deforestation had taken place, we were only interested in when that happened and the likely consequences.”

As the researchers began to closely examine the argument for deforestation in Chaco, they found the claim to be largely untested, and concluded that there was no evidence that the 13th-century depopulation of Chaco Canyon was caused by any specific cultural practices or natural events. “We found that there are no clear indications that any of these linked processes actually occurred, and therefore we suggest that Chaco not be used as an example of self-induced economic disaster,” he said, adding that “we are not saying that deforestation did not take place, only that the case is not clear cut.” Wills noted that the data suggest “a more complex historical situation, as well as the challenges of using archaeological information as lessons for modern society.”

There is still much to learn about Chaco, and a number of key issues are not settled and we really should be encouraging a new generation of young researchers to get involved in addressing those questions,” Wills said. “New methods, such as the GIS-based pathway study in our paper, represent important analytical technologies that may provide new ways of thinking about the costs and benefits of various kinds of economic activity in the past.” —Tamara Stewart

Archaeologists record an arroyo profile in Chaco Canyon.
Archaeologists Discover Clovis Hunted Gomphotheres

It was thought that the elephant-like animals went extinct before humans arrived in North America, but evidence from a Mexican site proves otherwise.

At the El Fín del Mundo site in the northwestern Mexican state of Sonora, researchers have uncovered the distinctive Clovis projectile points in association with the remains of two juvenile gomphotheres. Though they were once widespread across North America, gomphotheres were thought to have gone extinct prior to the human occupation of the continent. Charcoal found in the same layers as the bones and Clovis tools was radiocarbon dated to 13,400 years ago, indicating these were among the last known gomphotheres at one of the oldest Clovis sites in North America.

While ancient humans were known to have hunted gomphotheres in Central and South America, this is the first evidence of hunting in North America, according to archaeologist Vance Holliday of the University of Arizona, who co-authored a paper on the findings in the *Proceedings of the National Academy of Sciences*. “Ours is the youngest gomphothere and our site is one of the oldest Clovis sites in North America—so we have an early group of Clovis people bumping into a late group of gomphos,” he said.

In 2007, a rancher noticed large bones protruding out of an arroyo on his ranch in Sonora and invited researchers to investigate. Led by Guadalupe Sanchez of the Universidad Nacional Autónoma de México, the research team was at first unsure about the species of animal they were looking at. Then in 2008, they uncovered a jawbone with teeth, indicating the animals were gomphotheres, elephant-like animals that were smaller than mammoths.

“We had the bones identified as gomphothere, we had a few small flakes and a stone tool among the bones, and we had Clovis points from the surrounding areas, so we were hoping we could find at least one Clovis point in place to confirm that the bone bed was a Clovis feature,” Holliday said. “And we did. We found three essentially complete points plus the blade of another.”

The position and proximity of the Clovis points and the animal bones indicate that the animals were killed at the site, which was once a spring-fed swamp that would have attracted animals and early human hunters. While excavations at the site are complete, the researchers plan to map the surrounding land, which contains an abundance of additional Clovis material, to identify the possible presence of activity areas. “It is all on the surface, but it tells us that there was either prolonged camping or repeated camping around the area of the kill,” Holliday said.

—Tamara Stewart
Storm surges and rising seas are destroying remarkable archaeological sites on California’s Channel Islands, including some of North America’s oldest ancestral coastal villages. Archaeologists and conservationists from the Smithsonian Institution, the University of Oregon, the University of California-Santa Barbara, the Nature Conservancy, and Chumash tribal members have been racing to inventory sites on Santa Cruz Island that will establish baseline information to help guide conservation efforts and monitor site erosion. Of the scores of sites previously or newly identified, many were designated “code red,” meaning they contain significant archaeological resources in imminent danger of destruction. Jon Erlandson, an archaeologist at the University of Oregon, said he and his colleagues were “racing a rising tide” by revisiting known sites, recording new ones, radiocarbon dating as many as possible, and developing a triage system to determine which sites required data recovery.

One of the most significant sites was a remote cave where the team found a remarkable array of artifacts dated to about A.D. 1400, including stone tools, a loosely twined basket, woven rope fragments, seaweeds, and a wealth of marine shells, animal bones, and other objects that attest to the complexity of Island Chumash adaptations. The Chumash have inhabited the northern Channel Islands for at least 10,000 years, and their prehistoric and historic campsites, villages, workshops, and other features are scattered across four islands located off the southern California Coast. Santa Cruz Island, the largest of the Channel Islands, contained 11 historic village sites. The Nature Conservancy owns 76 percent of the 96-square-mile island, with the remainder managed by the National Park Service as part of Channel Islands National Park.

In 2010, the National Park Service completed an archaeological overview and assessment of the Channel Islands National Park, determining that the cultural resources on Santa Cruz Island vary in size to a greater degree than the resources found on the other islands, with some habitation sites among the largest recorded in what is now the state of California. But erosion has taken a major toll and rising seas associated with climate change threaten to damage or destroy hundreds of sites in the decades to come. At one site near the remote cave, three large Chumash house pits observed in the 1970s were completely destroyed by 2013, when Erlandson and his colleagues visited the site.

Torben Rick, a project archaeologist with the Smithsonian Institution, said that coastal archaeological sites around the world are fragile and non-renewable resources that warrant significant research and conservation before they are lost to marine erosion and other processes.

—Tamara Stewart
A tree-ring study by Columbia University researchers has determined the age of a vessel discovered four years ago during construction at Ground Zero in New York City. By examining the tree rings of the ship’s waterlogged timbers, the researchers concluded the ship was likely constructed in 1773, or soon after. The study also indicates that it was built in a shipyard in Philadelphia.

It’s the first time that tree-ring dating, known as dendrochronology, has determined the age of the remains of a ship from the Northeastern United States and identified where it originated. “We were hoping for an approximate date of construction,” said Molly McDonald, archaeologist with AKRF, the cultural resource management firm that monitored the construction site for the Lower Manhattan Development Corporation. “The vessel could have come from anywhere. We didn’t realize they could also pinpoint a location of origin. This was particularly useful information to have for a vessel which, unlike other types of timber features, could have come from anywhere.”

The roughly 20-foot-wide, 60-foot-long sloop was designed to carry cargo and passengers along rivers and East Coast ports. It sank in the harbor by the early 1790s, when the area was filled in to extend western Manhattan Island, McDonald said. In 2010, archaeologists discovered a section of the ship’s hull 22-feet below street level at the World Trade Center site. Artifacts associated with the ship, including buttons, ammunition, buckles, and ceramics indicated that it was in use during the late 18th century.

Tree ring patterns record the climate in specific geographical locations. They are wider during wet years and narrower during dry years. The wood can be dated and sourced by matching the pattern to samples that were dated archaeologically and by corings from live trees. Dario Martin-Benito, who led the study, said many of the ship’s timbers were made from white oak, which is found throughout the world, but the hickory keel suggested that the ship was probably from the Eastern U.S.

By comparing tree rings from the ship’s wood to a database of tree rings from the Eastern U.S., researchers narrowed down the origin of the timbers to eastern Philadelphia. Ring patterns in the ship samples also matched archaeological samples of wood used to build Independence Hall in Philadelphia, where the Declaration of Independence and the U.S. Constitution were signed.

The researchers also discovered that a majority of the wood used to build the ship had similar ring patterns, indicating that the trees harvested to build the ship grew next to each other in the same forest and were cut down at the same time. —Paula Neely
Mercyhurst Archaeological Institute researchers excavate the Meadowcroft Rockshelter. The white tags are used to record a stratigraphic unit or a man-made feature.
The first prehistoric artifacts at the Meadowcroft Rockshelter site in southwestern Pennsylvania turned up in a groundhog burrow in 1955. When Jim Adovasio began his decades-long investigation of the site in 1973, his team worked with much greater care. “What we were trying to do from the beginning was excavate more carefully than any closed site [i.e. cave] had been on the planet,” he said. “Once a site is excavated it is functionally destroyed and has essentially ceased to exist.”

It’s fortunate they did, because radiocarbon dates eventually showed the site was occupied 16,000 years ago, well before the start of the Clovis era, which was once widely considered the earliest human occupation of the Americas. As data from Meadowcroft began to be published in the 1970s and ’80s, it fueled a burning debate over when the first people arrived in the New World. “I completely underestimated the whole thing,” said Adovasio. “I never understood precisely how enamored people were of the existing model, how long it would take for the paradigm to pass away, and how vitriolic the criticisms back and forth would be.”

The idea that people first entered the New World roughly 13,000 years ago by way of an ice-free route between Siberia and Alaska held sway for much of the 20th century. In recent decades, though, a series of findings throughout the Americas has cast doubt on the “Clovis First” model. Sites from Oregon to Chile have produced radiocarbon dates that are older—in some cases by thousands of years—than the Clovis period.

While little of this evidence has gone unchallenged, the idea of pre-Clovis occupation of the Americas has gained widespread acceptance in the scientific community. A 2012 survey of 132 people who had published or presented on the subject found that 58 percent believed the Americas were settled earlier than 13,000 years ago.
“The peopling of the Americas explained by the Clovis-first model is dead,” said Tom Dillehay of Vanderbilt, who has led excavations at Monte Verde in southern Chile, which topped the survey’s list of accepted pre-Clovis sites. “That question has been answered.”

At the same time, although many sites are said to be of pre-Clovis age, only a few of them are considered to be legitimate by many experts. This raises the question of how pre-Clovis sites achieve acceptance, or don’t, in the archaeological community. Why does one site make the grade while another doesn’t, even though both were investigated by professional archaeologists? Is the process based strictly on evidence, or is it more complicated than that?

The 2012 survey, conducted by graduate student Amber Wheat of the University of Tennessee, found only three pre-Clovis sites that more respondents accepted than rejected: Monte Verde, Meadowcroft, and Paisley Caves in southern Oregon. Of the three, only Monte Verde received a majority of “acceptable” scores (67 percent), while the most common response for the other two sites was an equivocal “neither agree nor disagree.”

One reason there are so few, according to Steve Holen, co-director of the Center for American Paleolithic Research, is because of a lingering sense of skepticism over claims of early settlement of the Americas. “Early on, there were some great claims made for early humans in the New World based on very poor evidence that turned out to be wrong,” said Holen, who has excavated mammoth bone-processing sites in the Great Plains that have been dated to pre-Clovis time.

Claims of sites proving people were in the Americas 100,000 years ago have been put forth as far back as the 19th century. But even solid evidence of human settlement during the Pleistocene didn’t come until 1927, when distinctive stone points dating to 8000-9000 B.C. were found near Folsom in New Mexico. “There were literally scores of claims of Pleistocene sites prior to 1927,” said David Meltzer of Southern Methodist University, but only the Folsom site withstood close scrutiny. “As archaeologists, we have to be skeptical,” Meltzer said. “We’ve been fooled before.”

As an example of a bogus pre-Clovis claim, Meltzer and others point to the Calico Early Man site in the Mojave Desert in southern California. It was initially claimed that tens of thousands of stone fragment in sediments dated to over 200,000 years ago were altered by humans. Since then, however, the consensus has become that they were formed by natural processes. In the 1950s, a site at Lewisville Lake in north Texas produced artifacts that were radiocarbon-dated to around 36,000 years ago. These dates were later found to be the result of cross-contamination, and were corrected to around 12,000 years ago.

Evidence for the first legitimate pre-Clovis site was going to have to be “absolutely rock solid,” Meltzer said. “The very first site to clear the bar was going to just have to sail over that bar.” He drew a comparison to Jackie Robinson breaking baseball’s color barrier in 1947: as the first black player, Robinson couldn’t just be good—he had to be outstanding. In Meltzer’s opinion, Monte Verde sailed over the bar.

Another possible reason the list of acceptable pre-Clovis sites is so short is that there just aren’t that many of them, said Dennis Jenkins of the University of Oregon, who has led excavations at Paisley Caves. He lists seven universally recognized criteria for evaluating the age of Paleo-Indian sites: a consistent series of accurate radiocarbon dates; statistically precise dates with a standard error of 300 years or less; dates run on single items; items that have been taxonomically
to have little cultural material, and no skeletons of that age have been found. As a result, it has been very difficult to get good radiocarbon dates on pre-Clovis sites. At Paisley Caves, Jenkins has overseen years of painstaking stratigraphic work and what he called a "phenomenal amount" of chemical analysis and cleaning of samples. He has obtained over 225 radiocarbon dates, including fossilized human feces dated to 14,300 years ago—nonetheless only 43 percent of the respondents in the 2012 survey rated the site acceptable.

Identified, with cultural carbon of adequate quality; items derived from recorded stratigraphy; items that are found in primary association with artifacts; and the evidence documented in peer-reviewed published accounts.

"If you try to match those criteria to purported pre-Clovis sites, you end up with a very short list," Jenkins said, "and it doesn't seem to be getting longer very fast." By these metrics Holen’s mammoth processing sites, for example, wouldn’t qualify because, according to Jenkins, they lack undeniable human artifacts. In general, pre-Clovis sites tend to have little cultural material, and no skeletons of that age have been found.

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The bottom line, said Robert Kelly of the University of Wyoming, is that the first settlers in a new land don’t tend to leave many traces. “Trying to establish when a land mass was colonized is a very difficult question,” he said. “Whenever colonization took place, it’s going to be evidenced by very, very few sites.”

“Clovis just created one hell of a paradigm,” Dillehay said, and when it was challenged, the debate quickly become non-scientific. “In many cases, people started tossing out any reason, with no scientific hard evidence to prove or disprove what they were saying.” He noted that European archaeologists accepted his data from Monte Verde sooner than their North American counterparts. “These people didn’t have any mental paradigmatic barriers to hop over, as people here in North America did with Clovis.”

“This is all very political,” said Holen. “People who have published the same thing for 30 or 40 years are not about to admit they’re wrong now.” Adovasio compares Clovis First “holdouts” to those who never accepted the idea of pre-Ice Age human settlement in North America. “Some people will never admit that there were people in the New World before Clovis, so they’ll create ever more far-fetched arguments

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Radiocarbon testing of this mastodon rib with an embedded bone projectile point indicated it’s 13,800 years old, pre-dating the Clovis period. The rib was recovered from the Manis site on the Olympic Peninsula in northwest Washington State.

(Right) The projectile point is clearly seen in this X-ray CT image.

The remains of this hut foundation, uncovered at Monte Verde, were dated to around 14,500 years ago.
against it," he said. Some pre-Clovis skeptics have suggested that seeds from the coast ended up inland at Monte Verde by being excreted by flying birds, instead of through trade, or that stone artifacts could have been made by monkeys. "I mean, give me a break," said Adovasio. "That's non-science."

Holen said critics of his conclusions about the mammoth bone-processing sites have suggested that heavy limb bones were broken into tiny pieces by other mammoths trampling on them, even though more fragile ribs and vertebrae remained unbroken. Dillehay faulted the popular press for publishing unsupported counterarguments, which then find their way into the scientific literature. "It's good to be skeptical, but if you're going to, find some hard evidence to support yourself," he said, adding that many pre-Clovis doubters never excavate themselves or visit putative pre-Clovis sites despite being asked to do so.

Another contributing factor is that archaeology, unlike hard sciences such as physics, lacks objective methods of proof such as repeatable experiments. "That's part of the subjectivity of science that so rarely gets talked about," Adovasio said. "How do you evaluate the evaluation?" Even so, he said, "there's a point at which the weight of evidence becomes so profound that those voices become background noise."

On the other hand, said Stuart Fiedel of the Louis Berger Group, it's ironic how an idea that was once considered fringe has become entrenched. "Pre-Clovis is the new orthodoxy," said Fiedel, one of its most outspoken skeptics. "Once these people had a feeling of being stomped on by the supposed establishment. Now they're doing their own stomping."

There have been allegations of a powerful and stubborn group defending the Clovis First theory, an academic "Clovis police," but Fiedel called this a "paranoid fantasy." (He facetiously titled a talk he gave at the 2012 Society for American Archaeology meeting "Confessions of a Clovis Mafioso"). At the same time, Fiedel described a tight-knit network of researchers who read each other's papers, approve each other's grant proposals, and enjoy financial support from major funders for projects whose explicit goal is finding evidence of pre-Clovis occupation. "That's the new pre-Clovis mob," he said. "And it really exists."

Fiedel's criteria for an acceptable pre-Clovis site include a fairly large collection of stone tools that are unquestionably made by humans, found in a well-sealed stratified context, ideally without later occupations above it. The tools should have a clear association with items that yield multiple, consistent radiocarbon dates more than 14,000 years ago.

According to these benchmarks, Fiedel said the most plausible (though not to his mind impeccable) candidates are Meadowcroft, Friedkin, Cactus Hill in southern Virginia, Miles Point on the Chesapeake Bay in Maryland, and the
Hebior and Schaefer mammoth kill sites in southeast Wisconsin. Fiedel questions the human origins of the stone, wood, and bone artifacts found at Monte Verde. The desiccated human feces found at Paisley Caves appear credible, he said, though they have non-human chemical and morphological traits and could have been contaminated by later human DNA.

In the larger sense, Fiedel agreed with Meltzer’s belief that evidence for pre-Clovis occupation needs to be definitive. “The dates and processes of initial human colonization of the Americas are crucial issues for the understanding of human biological and cultural development,” as well as other topics like megafaunal extinction, he said. “We just haven’t found a decent [pre-Clovis] campsite with unambiguous stone tools and debitage, an ordinary Paleolithic living floor like you see in any French river valley or cave site.”

Fiedel said he is open-minded on the issue, and admits “it is a bit uncomfortable being in the minority, knowing that one good discovery could tip the balance.” He predicted that someone will eventually find a site, probably in

Are they artifacts or geofacts? Archaeologist Al Goodyear is certain that these items uncovered in a 50,000-year-old stratigraphic level at the Topper site in South Carolina were made by humans, but other archaeologists think they were fashioned by nature.
the Northwest, that yields bifaces and blades with elements that could have evolved into the classic Clovis style and that date to about 14,000 years ago. “I strongly doubt we’re going to get any real sites older than 14,600 years,” he added, noting that’s the time when the ice-free corridor opened and not long thereafter abrupt ecological transformations that could have been caused by humans, including megafaunal extinction, occurred.

Researchers who think they have a pre-Clovis site don’t just have to perform meticulous, expensive excavations, said Dillehay. They also need to publish their data, and short articles may not be enough. “It’s hard to get full acceptance until everything is out there,” he said, pointing to Monte Verde as one of the few such sites with substantial published monographs. “You inherit views about a site from your education and the ideas of immediate colleagues, but also how much primary reading you have done about the site in question.”

This recalls another finding of the 2012 survey: a nearly direct relationship between the acceptance of a site and the amount of detailed publications available about it. (This can be a catch-22, with acceptance and publication dependent on each other.) Mike Waters, director of the Center For the Study of the First Americans at Texas A&M, said he is seeing new students become more open to the idea of pre-Clovis occupation of the Americas, in part because it is included in introductory textbooks. Terminology is important, Waters added. “You could call these people proto-Clovis,” he said. “I bet if you did, most people would be on board and there wouldn’t be a big disagreement. Maybe we should get rid of the term and just call it the Early Exploration period.”

Even if the terminology doesn’t change, talking about pre-Clovis, said Kelly, implies we know when Clovis began. “The beginning date for Clovis is pretty elusive,” he said, an issue that is consistently ignored in the field. There are only about 15 well-dated Clovis sites in the continental U.S., he pointed out, all of which were occupied for only a few centuries. “We have to remember we’re always dealing with samples,” Kelly said. “We have to ask, to what extent is this sample representative of the population?”

“In the grand scheme of things, it really doesn’t matter that much if people got here a thousand years earlier than we thought,” said Meltzer. Pushing back the settling of the Americas to 14,000 or 15,000 years ago isn’t a cultural game-changer like the idea of continental drift, or the 19th-century discovery that humans lived during the Ice Age, which contradicted the Biblical version of history. “That really turned people’s heads upside down.”

What would truly upend things would be dates that were older by tens of thousands of years, like those put forth from controversial sites such as Topper in South Carolina. Al Goodyear of the University of South Carolina, who has directed excavations at Topper, said he’s “absolutely convinced” he has human-made artifacts in soil layers as much as 50,000 years old. “If you have real artifacts validly associated with really old sediments, you have a really old site,” he said. But many others disagree, saying what Goodyear claims to be artifacts are actually geofacts, items fashioned by nature, not humans. (“Mother nature sometimes breaks stones in interesting ways,” Kelly said.) Kelly’s and others’ skepticism was reflected in the 2012 survey, in which only 15 percent of the respondents rated Topper “acceptable” versus 37 percent who didn’t.

In the end, Meltzer said, whether or not a site is accepted as pre-Clovis might change the way we view the peopling of the Americas, but not global human evolution. “We’ve established the principle, now we’re just haggling over the details.”
"The Maya royal house of cards collapsed because of its inability to maintain infrastructure—especially in the sphere of water control. Farmers adapted; kings did not."
Michelle Hegmon wants archaeologists to take a new look at ancient cultures—one that goes beyond rigorously documented, exhaustively peer-reviewed, and often numbingly dry analyses of flint chips, potsherds, soil profiles, funerary objects, and kitchen waste. She wants them to ask a simple question: “What was it like to live back then?”

“We can measure population-resource imbalances, but we don’t ask what it was like to be hungry,” said the Arizona State University archaeologist. “We can estimate how much corn it took to feed a family, but we don’t think about how much effort, usually by the women, went into grinding it into meal. We can see the effects of conflict and disease in bones, but we don’t ask what it was like for the people who experienced it.”

As in economics, where statistics like the GDP and factory orders fail to capture the reality of bread-and-butter issues, Hegmon believes that archaeology’s focus on the big picture of ancient cultures often overlooks “the archaeology of the human experience”—the ways that factors like hunger, health, and security shaped people’s daily lives as well as the course of the culture itself.

In the November 2013 issue of the Society for American Archaeology’s Archaeological Record and in a forthcoming collection of research articles titled The Archaeology of the Human Experience, Hegmon and a dozen colleagues provide the outlines of what they see as a “new paradigm” in archaeological research. They hope this paradigm will provide the public with a more human, more understandable view of the archaeological record and remind 21st-century policy makers that there is still much to learn from ancient peoples’ struggles with problems we confront today such as violence, inequality, social upheaval, and climate change.

Hegmon believes that the key aspects of human experience now are not so different from those that people
experienced centuries ago. In fact, she thinks archaeologists would be well advised to frame their view of the past through the “seven dimensions of human security” that the United Nations Development Program formulated in 1994—food, health, personal, environmental, economic, community, and political security.

“We obviously can’t know exactly what an individual’s life was like back then,” said Hegmon. “But we need to do a better job telling the stories of the people we are studying. We tend to make archaeology boring even though most of us got into the field because it was so interesting. There needs to be a place, even in academic journals, for accounts that are both rigorous and moving.”

For Hegmon, the realization that archaeologists needed a new way to look at the past started some 20 years ago when, as a young Ph.D. student, she visited an excavation at Cowboy Wash in Southwest Colorado. Archaeologists had uncovered a kiva filled with processed human bones there that sparked a furious debate over possible evidence of cannibalism among the Anasazi.

Subsequently a grisly massacre of 40 people at nearby Castle Rock Pueblo was discovered. These finds indicated that this period, which was marked by drought and dwindling food supply and preceded the Anasazi’s late-13th-century abandonment of the Mesa Verde region, was a time of violent social upheaval.

“Hunkered down, the people moved huge boulders to create a wall around the village and surrounded themselves with shrines—but to no avail,” she said. “As the drought worsened and the food supply dwindled, the people turned on each other. Some communities were basically under siege. It was clearly a terrible time. We don’t need to sensationalize it, but we should try to understand it.”

Hegmon credited insightful accounts of the last days of the Anasazi by University of Colorado archaeologist Scott Ortman, University of Nevada, Las Vegas bioarcheologist Debra Martin, and others for her realization that archaeology needed a way of looking at the past that, while still rooted in scientific methods, would encompass a greater range of the human experience.

Ortman’s studies linking the abandonment of Mesa Verde with the rise of Tewa pueblos in New Mexico’s Rio Grande Basin in the 13th century provide a glimpse of what greater insight into the human experience can add. For years, many archaeologists doubted—and some still do—that today’s Rio Grande pueblos are descended from the Anasazi of the Mesa Verde and the greater Four Corners region.

After all, the Rio Grande pueblos were, and still are, organized around plazas instead of kivas, which the Anasazi preferred. The pottery made in early Rio Grande pueblos is also somewhat different than that produced in the last Mesa Verde-area settlements. Tewa pottery was different as well. But Ortman saw that there were other pieces to the puzzle. By supplementing archaeological research with knowledge about the languages and oral traditions of contemporary pueblo people, he made a persuasive case for a connection between the two populations. For example, although the villages look very different on the surface, both have the same systems of shrines surrounding them. There are also genetic-based skeletal similarities between the two populations. Oral traditions among modern pueblo people, ceremonial practices, even words in the Tewa language that evoke now extinct Anasazi ways, all made his point.

“The differences in the material culture in early Rio Grande pueblos simply reflect that Pueblo people were leaving a life of struggle, strife, famine, and drought,” he said. “They migrated to the Rio Grande basin to leave that life behind and create a new society based on new values. But some of the new traditions still looked a lot like the old. Understanding how this transformation was accomplished socially and politically can help us understand what traditional archaeological measures can’t tell us by themselves.”

Sometimes artistic style—another distinctly human experience—can provide hints about the society in which it emerged. Archaeologists have, for instance, long puzzled over the abrupt disappearance of the insular Mimbres artistic tradition around A.D. 1130. For more than a century, people who inhabited the Mimbres Valley of southwestern New Mexico produced pottery embellished with their exquisitely rendered black and white drawings of people, animals, and geometric figures that were distinct from anything else in the prehistoric Southwest. After 1150, although many people stayed in the region, they reorganized their settlements and ways of life and ended their artistic tradition.

In the uniqueness of their art, some archaeologists see a reflection of the Mimbres character. While the manufacture of ceramics in other cultures was often a community affair, Mimbres bowls appear to have been produced by a mere handful of artisans. University of New Mexico archaeologist Patricia Crown has identified some Mimbres bowls, apparently made by child apprentices, that have uneven, wavering strokes tracing over guidelines apparently drawn by older, more experienced potters. This suggests that their pottery may have been a closed, and closely-held skill.

Arizona State University archaeologist Margaret Nelson said that the human experience reflected in Mimbres ceramics offers a hint about why, sometime around 1150, after years of prolonged drought, the Mimbres and their bowls disappeared from the archaeological record. “We look at symbols in pottery for some idea of what people’s traditions are,” she said. The Mimbres people were highly conforming in the way they expressed themselves. In a conforming environment, innovation and alternative ideas are not welcome. So in this way people resisted diversity. Also, the lack of pottery from adjacent regions indicates that people isolated themselves, ignoring others in the west and the north at a time when the Hohokam tradition to the west and the Chaco tradition to the north were thriving. With this isolation they also lacked input of alternative ideas and practices. They may have been fairly narrow in their ways of doing and thinking.”
While this narrowness poses no existential threat to a society, in the face of environmental dangers like changing climate, a lack of diverse ideas and practices is another matter. As their population expanded, Nelson believes the Mimbres had grown too conforming and isolated. When drought came, adding to other environmental and social challenges, they did not have the benefit of diverse perspectives or help from others, and they were unable to adapt. “Conformity and isolation made them vulnerable to change when it came. There was such a big institutional and population collapse that all of the Mimbres villages were depopulated.”

Archaeologists generally agree that prolonged and repeated drought played a role in the Maya collapse. But some say it was the human response to that drought—not simply a lack of rainfall—that contributed to the Maya’s downfall. To survive recurring seasonal drought, the Maya built a sophisticated network of reservoirs and canals. This massive public works took a large labor force, which imposed its own burden on the Maya kings. “The basis for royal power rested in what kings provided their subjects materially: water during annual drought via massive artificial reservoirs; and spiritually: public ceremonies, games, festivals, feasts, and other integrative activities,” said University of Cincinnati archaeologist Vernon Scarborough.

Then came years of drought. Reservoirs dried up. Kingly pleas to the rain god Chaak fell on deaf ears and the security the people had come to expect from their kings disappeared. “In the face of rulers losing their power, people left,” Scarborough said. “Without their labor, support, and services, the foundation of royal power crumbled.”

“We look at symbols in pottery for some idea of what people’s traditions are. The Mimbres people were highly conforming in the way they expressed themselves. In a conforming environment, innovation and alternative ideas are not welcome.”
Smaller communities, however, adapted and survived, relying on diversified agriculture that used water from small rivers, lakes, and watering holes. “In the Highlands of Guatemala and adjoining Chiapas, small scale *camellones*, which are raised fields on shallow slopes near creeks and streams—and terraces, or *tablones*, on the steeper hillsides have been used for centuries,” Scarborough said. And in Xochimilco, farmers still grow crops on traditional *chinampas*, narrow man-made islands in fresh water lakes.

Scarborough said seeing Maya history through the lens of the human experience should be a lesson for modern policy makers. “When problems first develop, leaders initially rely on traditional means. If this strategy fails, political systems transform or fall apart,” he said. “The Maya royal house of cards collapsed because of its inability to maintain infrastructure—especially in the sphere of water control. Farmers adapted; kings did not. The lesson is that we need to rely on diverse and more flexible means of support.”

University of Colorado archaeologist Catherine Cameron said scholars often underestimate the influence of so-called “marginal” people within a society, such as orphans, captives, or slaves. For example, she mentioned a growing body of evidence showing that African slaves on American plantations influenced the way pottery was made, how their owners built their houses, and even the food they ate.

“Captives in particular can be powerful agents of culture change,” she said. When archaeologists find evidence of new technologies being diffused throughout an area, they often assume that’s a consequence of trade or some other benign form of contact. But Cameron, who has been researching captives’ narratives, as well as ethnohistorical and ethnographic accounts, said the captives probably introduced some of these new technologies. For instance, archaeologists have found that the cooking pots of buffalo-hunting Indians in the Texas panhandle were made with local clays, but in a style used by Pueblo people hundreds of miles away. One likely explanation is that they were made by captured women brought into the tribes. “We know there was intermarriage, but we also know there were lots of people who...
were dragged out of their homes and taken somewhere else."

Cameron added that "Alien cultural practices such as pottery making or the organization of household space can be maintained within subaltern groups for generations and transmitted to the dominant group even under the most oppressive conditions. And yet if they are absorbed as wives or adoptees, captives themselves become invisible to history." Because of this archaeologists "need to look for these people."

The need for understanding the human experience is readily appreciated by bioarchaeologists. For them, every set of human remains is a time capsule of the life that person led, including the pain, suffering, disease, and disability an individual may have endured. In northern New Mexico, UNLV's Martin has found what appears to be evidence of captives or slaves among the people living in the La Plata River Valley in northern New Mexico around 1,000 years ago. She found healed head wounds, broken ribs, muscle attachments suggestive of habitual hard physical labor and other pathologies indicative of captivity and slavery on a significant proportion of the female skeletons.

The injuries varied, but none of them were the result of weapons of war. "Those skeletons of those who had suffered the greatest injuries also showed clear signs of habitual hard labor," she said. Some women were literally worked to the bone. The women may have been captives who were never fully accepted by the community. "These women were not treated with the same level of respect after death, either," said Martin. "There were no burial goods. And their bodies seemed to have been indiscriminately placed, or thrown, into abandoned pit structures."

Not all postmortems are as grim. "It's easy to document violence in the archaeological record, but there are happy stories too," said Martin. "We looked at 174 skeletons of people who lived at Black Mesa (in Arizona) between 900 and 1150 A.D. and found 30 people who were over the age of 60 and, while showing signs of arthritis and aging, were relatively healthy. Not everybody died young or died violently."

Hegmon and her colleagues contend that a better understanding of past human experience may make archaeology more interesting to the public. But they also say it could help today's policy makers understand that archaeology is, in many ways, the history of human experience in coping with adversity. A better reading of why violence occurred in the prehistoric Southwest, or knowing how Maya farmers coped with a changing climate, holds relevant lessons for a contemporary society grappling with the same problems.

But can a 21st-century urban world where many people's idea of an existential threat is the next computer virus or a bad credit rating, ever really grasp "what it was really like to live back then?" Alan Goodman, a Hampshire College anthropologist and past president of the American Anthropological Association, has had a taste of how difficult it can be to translate biological data into human experience. Early in his career, Goodman studied human remains that were excavated at Dickson Mounds in Illinois to assess the patterns of disease and death that marked the transition from hunter-gatherer to agrarian societies. He found widespread evidence of bacterial infections, malnutrition, trauma, and—in more than 70 per cent of the adults—rampant arthritic and other degenerative diseases. "Their health was really bad," he said. "I assumed they must have been miserable for much of their lives."

Later in life, however, he studied the health and nutrition of children and adolescents in a rural highland community southwest of Mexico City and another in the Yucatán. He was astonished to find levels of disease and malnutrition on a par with the thousand-year-old remains he had seen in Illinois. He was also astonished to discover that the people were content and optimistic. "By any biological measure, their human condition was really bad, but they had a zest for life that just blew me away," Goodman recalled. "I think it is important for us to try to understand what the conditions of life were like in the past, but really knowing what it was like to live back then? That may be hard to tease out."

MIKE TONER is a Pulitzer-Prize winning writer in Atlanta, Georgia. His article "The Threat of Climate Change" appeared in the Spring 2014 issue of American Archaeology.
Rethinking Spiro Mounds

For years Spiro Mounds was thought to be a Mississippian chiefdom that flourished from trade. But a noted Spiro expert now believes it was a ceremonial center. The first excavation of this important site in more than 40 years could confirm or refute his hypothesis.

By Elizabeth Lunday

University of Oklahoma field school students walk to the site early in the morning.
RAIN HAD BECOME A MEMORY, a tale for children who had never seen the streams full and the fields heavy with crops. Instead, the corn shriveled in the relentless sunlight and animals disappeared from the woods. Desperate and pinched with hunger, the people decided to act.

Word went out to the surrounding villages and farms. People began to pour into the town. They constructed crude shelters, basically campsites, out of wood posts in irregular rows. They brought with them all of their precious objects: stone pipes in the forms of gods and heroes were gathered along with engraved shell cups, stone maces, projectile points, and colorful woven tapestries.

A new mound was about to be constructed in a basin-shaped pit carved within a large platform mound. The pit contained the remains of their honored dead that had been placed here for as long as two centuries. But now the old way of burial had to be changed, and in its place was a new practice that took the form of a medicine lodge. The tomb in this lodge was to be dedicated to a single individual, a great leader, accompanied by precious goods and placed amidst the cups, pipes, and armaments used to communicate with the gods. The people built high walls and a domed roof around the chamber, then they topped the structure with earth. An outpouring of chants, songs, dances, and prayers accompanied these efforts, all directed to one purpose: to renew the world.

“This is the story,” said George Sabo, director of the Arkansas Archeological Survey, leaning back in his chair at the Spiro Mounds Archaeological Center in Eastern Oklahoma. (The site takes its name from a nearby small town.) “People gathered at Spiro, brought sacred materials, and arranged them in a very specific way in order to perform a ritual intended to reboot the world.” This “story” is the new hypothesis of esteemed Mississippian archaeologist James A. Brown, based on decades of research. It’s also the story that archaeologists investigating Spiro hope to either confirm or deny. “What we’re doing at the site is seeing if the evidence on the ground supports Jim Brown’s reconstruction,” said Sabo, who is one of several codirectors of the investigation.

A team of archaeologists from the Oklahoma and Arkansas archaeological surveys and the universities of Oklahoma, Arkansas-Fayetteville, and Arkansas-Fort Smith recently began the first major excavation at Spiro in more than 40 years. Armed with data from an extensive remote-sensing survey, they’re investigating a series of anomalies found in areas that have never been excavated. The anomalies appear to be the vestiges of small, irregularly-shaped buildings that were used for a short period
of time, perhaps only a few weeks. It’s possible that, if the buildings were contemporaneous with the construction of the mound, this might be where people gathered at the height of the drought to build the sacred chamber.

“So far what we’ve seen leads us to think that the excavation is going to support Jim [Brown’s] story,” said Sabo. “But we all realize that evidence is what it is. We’re hoping we’ll get something that clearly supports the hypothesis—or clearly doesn’t support it.”

AROUND A.D. 800, a group of people established Spiro in a bend of the Arkansas River. Between 900 and 1300, the site grew, adopting the cultural practices of the Mississippian people, including building earthen mounds. By about 1100, Spiro contained multiple mounds of various shapes and sizes. Over time, goods from as far away as the Florida coast, the Gulf of California, and the Great Lakes made their way to the region.

Spiro’s residents built the aforementioned mound that housed the human remains and spectacular grave goods, and which came to be known as Craig Mound, around 1200. Archaeologists generally believe the mound was constructed in one phase. But Brown now thinks the lower mortuary level—what he now calls the Great Mortuary—was in use for some time, perhaps for two centuries, before the medicine lodge-like upper chamber—which he calls the Spirit Lodge—was constructed. In any case, the completion of the mound was the last gasp for Spiro. Within a few years, the site was abandoned.

In 1933 the owner of Craig Mound, which then stood 33-feet tall, leased the land to a group of local men, known as the Pocola Mining Company, who hoped to find arrowheads to sell to dealers. In the summer of 1935 they tunneled into the mound and discovered one of the biggest collections of pre-Columbian artifacts north of Mexico along with the remains. The news reports at that time compared it to King Tutankhamun’s tomb.

Archaeologists used a newly passed antiquities law to kick the looters off the site in late 1935, but the damage was done. The miners had crushed shells and beads under their wheelbarrows, sold everything they thought to be valuable, and dumped whatever they thought wasn’t, including...
the human remains. While many Spiro artifacts have been donated to museums, others have been scattered to the winds. “There’s stuff from Spiro everywhere,” said Scott Hammerstedt, an archaeologist with the Oklahoma Archeological Survey and another of the project’s codirectors. “Some of it is in museums all around the world, but it also turns up in people’s attics.”

Working with the Works Progress Administration, archaeologists from the University of Oklahoma excavated the remains of Craig Mound between 1936 and 1941. (The mound was reconstructed in the 1970s.) They also excavated other mounds and identified the sites of several houses. However, their methods, while acceptable at the time, were nearly as destructive as the miners; their record keeping was spotty, and many reports and documents were lost.

It wasn’t until the 1960s that archaeologists began to reexamine Spiro. In 1963, Brown was hired to document the artifacts from the WPA dig. This job led to more analysis of Spiro artifacts, including a multi-year examination of engraved conch shells that was published in a six-volume study authored with Philip Phillips. “I got immersed in Spiro,” said Brown, now an emeritus professor of anthropology at Northwestern University. He also participated in the second major excavation at the site from 1978 to 1982. His work, and that of his colleagues, yielded important data about the site and provided the first insights into Spiroan culture.

The Interpretation of Spiro has evolved through the years. Originally, Brown considered Spiro through the lens of Mississippian archaeology in the second half of the 20th century, which focused on the development of chiefdoms. Only a chiefly elite, he reasoned, could organize and control the trade network needed to bring in such prestige goods. Brown understood Craig Mound as the product of a stratified society, constructed by commoners on the orders of the elite. It served as both a grave for elite families and a storehouse for their precious goods.

This hypothesis satisfied Brown until a few years ago, when a student asked him if enough details of the Great Mortuary were available to create an illustration of it. Brown found the idea intriguing. As he reexamined all the evidence, paying special attention to descriptions of the chamber by
the miners and the few photos of artifacts in situ, he began to reconsider Craig Mound. Changing his long-held beliefs was “not without some pain” for Brown, but when he saw holes in his own argument, he was driven to fill them.

Aspects of Spiro had never fit well within the chiefdom model. For example, if the chiefs drew their power from trade, what were they trading? The local resource base was weak. Scholars have proposed Spiro controlled trade between the Plains and the Woodlands, but the evidence for this control is “shaky,” according to Hammerstedt. The site also lacks the signs of extensive habitation that a major trading center would produce, said Sabo. “If you had a big trade network, you would expect to see that reflected in other aspects of the site.” In fact, the only element of Spiro that is different from any other Mississippian village is Craig Mound. “If you take away Craig Mound,” Sabo said, “it’s a local ceremonial center, like many others distributed through the region.”

While driven by the specifics at Spiro, the shift in emphasis from the chiefdom model reflects a general change in the thinking of Mississippian archaeologists. “Twenty years ago, archaeologists working in the Mississippian period were very focused on power,” said the University of Oklahoma’s Patrick Livingood, another of the project’s codirectors. “Now we’re starting to reinterpret things in terms of enacting belief.” Archaeologists now see activities such as the construction of the Great Mortuary as expressions of faith rather than as political ceremonies elevating a particular individual or family.

Instead of the chiefdom model, Brown now proposes a model for Spiro based on ritual and religion. In this interpretation, Spiro evolved over time from a small village that included both ritual and residential structures into a ceremonial center. Between 1000 and 1250, the site grew in size and complexity as multiple mounds were constructed; about 1250, the residents relocated to nearby areas and left Spiro as “an uninhabited ritual precinct,” Sabo said. Residents of villages and farms for many miles around likely looked to Spiro as their ceremonial capital and brought precious goods to the site as offerings.

In this context, Brown revised his thinking about Craig Mound. He knew Spiro suffered from extreme, repeated droughts. Climate scientists studying tree rings have found drought devastated central North America from the mid-1300s to the mid-1400s. Spiro experienced extremely dry
conditions between 1449-1458; this later date is about the same time the site was abandoned.

What if, in an attempt to magically resolve this crisis, the community built the Spirit Lodge to harness the energies of their sacred goods and their ancestors? “It’s like a superconducting super-collider where we’re trying to recreate the conditions of the Big Bang and the creation of the universe,” said Sabo. “In a similar way, the folks here were trying to recreate the conditions in which their world came to exist.” Simply praying for rain wasn’t enough in the face of this catastrophe.

Brown’s new model doesn’t entirely exclude a chiefly figure. Along with channeling the power of the sacred goods and revered dead of the community, he believes a leader was placed in the Spirit Lodge about 1400. The leader was symbolically raised to semi-divine status when buried in the shrine, and he was able to intercede with the gods on Spiro’s behalf. “That leader is inserted into this chamber to enshrine him in the chain of being that reaches up to the gods,” Brown said.

Sabo and Brown point to the iconography of effigy pipes and carved conch shell cups that support Brown’s theory. Both focus on a prominent figure known today as Morningstar. The archaeologists believe Morningstar played a central role in Mississippian creation stories during the Spiro era, just as he did in the myths of residents of this region that were recorded in the early 1800s.

THE ARCHAEOLOGISTS WERE EAGER to excavate Spiro to test Brown’s hypothesis, and also to assess the erosion damage caused by a man-made stream that bisects the site. In 2011, the team began with an extensive remote sensing survey during which they found an unexpected series of anomalies in irregular rows by Craig Mound. “There are at least 80 of them,” said Hammerstedt. The anomalies, which are thought to be indications of ancient structures, are odd. Typical Spiro houses “have nice, solid walls. The posts are obvious, it’s all very carefully oriented, very carefully built,” he said. “But these things are haphazard. They don’t form nice patterns.”

The team excavated one of these anomalies in October 2013 and began work on three more last May. The structure excavated in October was nearly 15 feet in diameter and it had an irregular half-square and half-circle shape that they called a “squircle.” This year the archaeologists uncovered walls and postholes, but both are incredibly faint. “We would never have known these structures were here without the geophysics,” said Hammerstedt. “We might have dug through them and never known.”

The archaeologists believe the structures left such a light mark because they weren’t in place for long. “We think they were really short-term occupations,” he said. “We think it’s a campsite. We can’t prove what it is, or whether it’s early in the site or late in the site, but we think people
WPA workers excavate a typical Spiro structure with four large potholes in the center and a series of smaller holes where the square-shaped walls once stood.

were coming here for an event."

“One implication of Brown’s account is that a number of communities came together to participate in this ritual event,” said Sabo. "The people of Spiro would have called on the surrounding villages and farms with ties to the ceremonial center to join them in the ritual construction of the mound. "So where’s the evidence of these people? There was an ‘aha!’ moment when we were doing the remote sensing and we found the linear arrangement of what look like temporary structures. Maybe this is the campground for the folks who assembled."

Sabo continued, "What we’re hoping is that we will retrieve materials that will help us place these structures in time. If it so happens that the temporal placement is the early 15th century, then that lends independent support to Jim [Brown’s] argument.” No dateable artifacts have been uncovered in the structures. However, the team found charcoal just outside of one structure and what is probably a charred post from another, both of which will be radiocarbon dated later this year.

Meanwhile, they will continue to excavate Spiro’s anomalies when they return to the site. Hammerstedt also wants to expand remote sensing beyond the immediate site to search for evidence of the communities and farms assumed to have surrounded Spiro as well as any other broad patterns of occupation. "We want to do geophysical surveys over this whole area, every open field we can find," he said.

If the date of the anomalies turns out to contradict the new Spiro story—well, that’s how science works, said Brown. "We’ve got a good story, but a few years from now we might have to revisit it." A single piece of evidence could shatter the account, but, he said, "Scientists are always in search of the contradictions."

No matter what the temporary structures at Spiro represent, they’re an unusual find. "We’re seeing something that’s a moment inside history that no one has known about previously," said Livingood. "We’ve got something really cool."

ELIZABETH LUNDAY’s latest book is The Modern Art Invasion: Picasso, Duchamp, and the 1913 Armory Show that Scandalized America.

Her article "Making A Case for the Pre-Clovis" appeared in the Fall 2011 issue of American Archaeology.
Nearly 500 years ago Spanish conquistador Hernando de Soto led an expedition through a large swath of what is now the Southeastern U.S. Though the expedition consisted of hundreds of men and animals that traveled thousands of miles, archaeologists have found surprisingly little evidence of it.

By Kristin Ohlson

The Atlanta high school girl was in the middle of a solitary stint at the sifting screen, while archaeologist Dennis Blanton and the rest of the group working at the Glass site were engaged elsewhere. Then Blanton heard the girl, who was usually too shy to speak out, calling him. As he approached, she extended her arm and opened up her clenched fist. “Mr. Blanton, is this anything?”

There, in the middle of her palm, was the kind of brightly colored, multifaceted glass chevron bead associated with the 16th-century expedition of Hernando de Soto.

The discovery sent a jolt through Blanton and his crew. A number of archaeologists have dedicated their careers to finding evidence of de Soto’s expedition, which began on the west coast of Florida in 1539 and concluded four years and 4,000 miles later. But Blanton wasn’t one of them. In fact, the purpose of his excavation of the Glass site was to search for
evidence of a Spanish mission that was established decades after de Soto’s expedition.

But ever since the high school student’s discovery of the bead in 2006, Blanton, who is now on faculty at James Madison University, has been returning to the site to look for additional evidence of de Soto and to understand more about the native village that may have hosted him. By now, the Glass site has yielded the largest collection of de Soto-era artifacts outside of Florida. Pottery samples as well as radiocarbon testing of burned wood and tobacco residue in pipes date the site to the de Soto years. Blanton believes he’s found the village of the one-eyed chief Ichisi, one of the few native leaders to welcome de Soto. However, this conclusion has rocked the world of de Soto scholarship because the Glass site, which is 120 miles west of Savannah, Georgia, is about 100 miles from the route posited in 1984 by ethnohistorian Charles Hudson and other experts, which most scholars believed to be correct.

“If it had been just the one bead, I’d think maybe,” Blanton said. “But by now, we’ve pretty much checked off everything on the list of key artifacts associated with de Soto—we’re like birders checking off all the birds on our life list. As we say here in the South, I didn’t have a dog in this hunt—the hunt for de Soto—but once you make this kind of discovery, you have a professional and ethical obligation to make sense of it.”

The hunt for de Soto has been going on ever since the 18th century, but finding the trail of the expedition remains challenging. Archaeologists are cautious about designating a site as one of de Soto’s steppingstones across the Southeast, because getting one site wrong can throw off the rest of the route.

In 1539 de Soto launched five ships holding 600 men, 200 horses, packs of dogs, and a large herd of pigs from Cuba and headed towards La Florida—what is now the Southeastern United States—to make his second fortune. He had outfitted the expedition of conquistador Francisco Pizarro in 1532 and was Pizarro’s second-in-command during the fabulously lucrative sacking of the Incan Empire. De Soto anticipated similar spoils in North America. So did the king of Spain, who had named de Soto governor of both Cuba and La Florida. He sent one of his own bean counters on de Soto’s expedition to La Florida to keep an eye on the millions in gold, jewels, spices, and other treasures that he was sure would become taxable plunder.

“De Soto had a contract with the king allowing him to be governor of La Florida if he explored it and set up a certain number of towns and forts,” said Jeffrey Mitchem, an archaeologist with the Arkansas Archeological Survey who has been working since 1990 at Parkin Archeological State Park in Arkansas. “They both thought de Soto would be finding another Peru or Mexico with tons of silver and gold.”

De Soto was aware that the conquest of La Florida was a dangerous task. Eleven years before his own expedition, another Spanish conquistador named Pánfilo de Narváez had set sail for Florida with a similar goal, but storms and hostile Indians decimated his party, and only four stragglers returned. So as soon as he landed, de Soto began to fight his way up the coast. He was fortunate in that one of his early forays resulted in the capture of Juan Ortiz, a member of the Narváez party who had been enslaved and then adopted by one of the local tribes and now spoke several native languages. By October, the expedition penetrated the interior of Florida. They attacked and overcame a large Indian town called Anhaica and camped there for five months.
All of these details—from the landing at an embayment in Florida to the wretched end four years later, with de Soto dead and the expedition reduced to roughly half its size—are part of the historical record. There are three intact chronicles written by members of the expedition: a diary by de Soto’s personal secretary, an account written by the representative of the Spanish king, and a narrative by an unknown Portuguese gentleman. There are two other accounts, one of which only fragments survive, while the other is a greatly embellished narrative, based on interviews with the survivors, written by Garcilaso de la Vega decades after the expedition.

But even with all this documentation, pinpointing the expedition’s journey—north through Georgia into what was likely South Carolina and then west to ultimately cross the Mississippi River and wander through Arkansas and parts of Texas, and finally retreat back down the Mississippi to the Gulf of Mexico—is a challenge. The chronicles don’t agree on all points; the towns, villages, and farmsteads they describe are long gone, and none of them included a map. The writers of the chronicles tried to gauge the direction and number of leagues they traveled in a day, but they didn’t have surveying equipment and the definition of league varied from one account to the next.

“De Soto’s intrusion was the beginning of recorded history in this part of the world,” Blanton said. “If we can pin down his path through the Southeast, that will provide a bridge to the geography of Native American politics and social organization on the eve of contact with Europeans. That’s why we want to get it right.”

Serendipity has aided the hunt for de Soto all along, from the discovery of the chevron bead at the Glass site to the discovery of artifacts at the Martin site in Tallahassee, Florida, that allowed archaeologists to push one important and definitive pin into the map: the location of Anhaica. In 1987, archaeologist B. Calvin Jones noticed a construction crew tearing up the ground for an office complex and asked permission to look around. He unearthed enough artifacts to convince the skeptical contractor that the site might be an important one. Jones had already found 10 Spanish missions in north Florida, and he wondered if this might be another. But he noticed that the artifacts seemed to predate the Mission period of this region, which ran from 1633 to 1704.

Later that year, archaeologist Charles Ewen was brought in to codirect the Martin site excavation. By that time some 1,000 native and Spanish artifacts had been discovered. Ewen and Jones would uncover another 50,000, including a dozen chevron beads. Ewen recalled that the media swarmed the site on his first day, demanding to know if this was indeed de Soto’s winter
encampment. “We couldn’t say right away that de Soto had been there,” Ewen said. “We had to distinguish these objects from those of the Mission period, from salvaged shipwrecks, and from the Narváez expedition, which people could have been trading around.”

But the site was consistent with the chronicles’ description of Anhaica’s size and topography, and many of the artifacts were different from those typical of the Mission period. For instance, the archaeologists found a metal piece of a crossbow, which was the kind of weapon used by de Soto’s party. Today, the artifacts found at the Martin site are considered de Soto’s calling cards, and they constitute a template for what might be found at other de Soto sites.

The archaeologists also discovered a pig bone at the Martin site, which seemed the definitive proof of de Soto’s presence, as pigs, along with horses, were not native to the region. Recently, though, archaeologist Daniel Seinfeld of the Florida Bureau of Archaeological Research dated the pig bone using mass spectrometry, a method that wasn’t available in the 1980s, and he found that it’s from the 19th century.

Seinfeld is also using LA-ICP-MS (laser ablation inductively coupled plasma mass spectrometry) to examine the elemental structures of the site’s chevron beads to see if they match the structures of beads found at five other possible de Soto sites.

“The laser takes microscopic samples, then more than 70 elements are analyzed,” he said. “There was a lot of variability in how these beads were manufactured, because this was late-medieval glassmaking done in the workshop system, and they were still experimenting how to make the different colors.”

So far, Seinfeld has found a common elemental signature between the red found in four chevron beads from the Martin site and in the one bead found at Parkin Archeological State Park. The latter is the only de Soto-associated bead found west of the Mississippi River. Such artifacts are rarely found elsewhere in the numbers they are in Florida. “There are millions of glass beads in Florida,” said Mitchem. “As one of my colleagues says, it’s like they had a Mardi Gras parade down there and were handing out beads. They thought they were going to be resupplied by the ships. Two years later, they were more careful with these things.”

The expedition chronicles make it clear that de Soto crossed the Mississippi and entered what is now Arkansas.
in 1541. He was down to about 300 soldiers by this time, though 500 enslaved natives also accompanied him. There, the conquistador encountered his first native Arkansans in an important regional population center called Casqui. Based on the chronicles’ descriptions of the topography and the configuration of Casqui, as well as the discovery of de Soto artifacts, Mitchem and many other scholars believe that the 17-acre Parkin site, located in a river valley in the northeast part of the state, was the site of Casqui. (The Archaeological Conservancy acquired most of the Parkin site for the state park.) Here, de Soto and his party were again welcomed, seemingly because the chief was at war with another group and he saw de Soto as a potential ally.

Still, Mitchem and other archaeologists point out that it’s tricky to determine that a site was, indeed, a de Soto stopover on the basis of artifacts alone. “You can never be 100 percent sure that they weren’t carried there by someone else,” he said. But he’s now investigating a feature at the site that could push another definitive pin into the de Soto map.

According to the chronicles, de Soto had his men erect a huge cross—it took 100 of them to raise it—on the mound where the Casqui chief lived. In the mid-1960s when archaeologists were examining the site, they found a pit at the top of a mound where looters dug a three-foot hole. The archaeologists examined the different layers of soil in the mound before filling in the hole and noticed chunks of wood at the bottom, which they collected. Years later, Mitchem radiocarbon tested samples of the wood, which is curated at the University of Arkansas museum in Fayetteville, and he found they date to the de Soto era.

Wanting a more precise date, Mitchem took the wood samples to David Stahle, a tree-ring dating expert. Stahle identified the wood as bald cypress, but he couldn’t date the chunks because they were too small. However, a ground-penetrating radar survey done at the mound suggests that a wooden post extends about 10 feet down beneath the original hole. Mitchem’s next step will be to dig around the post and extract a section with intact rings for Stahle to date. “If Stahle can say that tree was cut down in 1541, we can make a pretty good argument that this was the cross raised by de Soto,” Mitchem said.

Of course, most of de Soto’s experiences in the Southeast were not as congenial as his time in Casqui. In fact, de Soto’s party fought a major battle in Alabama and was almost defeated about six months before he reached Casqui. Scholars are keenly interested in locating the site of Mabila, where the battle raged, as it was probably one of the bloodier battles fought on American soil. This killing ground should be studded with artifacts as well as the bones of de Soto’s men and Mabila’s inhabitants.
of dozens of Europeans, thousands of Indians (if the chroni-
cles aren’t exaggerating), and horses, but artifactual evidence
has been sparse.

Mabila should be near the west bank of the Alabama
River, but most of that area is forest. Plus, finding the cor-
correct site is difficult in this area where humans have lived for
12,000 years or more. “The number of archaeological sites
in an area like this is in the thousands,” said archaeologist
Vernon “Jim” Knight of the University of Alabama. “And the
map of what is now southern Alabama is covered with dots
suggesting where people think Mabila is.”

Since 2007, Knight has been trying a new approach to find
Mabila. He pulled together a working group of scholars from
many disciplines, including archaeology, anthropology, history,
and linguistics. “I’m an archaeologist, but I’m not proficient in
16th-century Spanish,” he said, noting that skill is helpful in
gleaning information from the chronicles. “Someone who is
doesn’t know how to interpret archaeological evidence, and
neither of us knows how to march an army through hostile
territory. We need experts collaborating together.”

The chronicles describe the topography and settlement
pattern around Mabila, stating that de Soto and his party
crossed the Alabama River and found a village that was on a
high, craggy bluff. From there they made their way to a large
Indian town. The next morning, after moving from one small
farmstead to another, they reached Mabila, where thousands
of Native Americans waited. They torched the town as well
as other towns in the area.

This fall Knight will excavate a promising site that was
investigated in the 1960s by David Chase, director of the
Montgomery Museum of Fine Arts. The site, called White
Oak Creek, has an archaic layer dating back 8,000 years ago
and a top layer that was an 18th-century French and Indian
campment, with material from the 1500s somewhere in
the middle.

After the trauma of Mabila, Casqui proved a respite for
de Soto, but then another battle, and finally death, awaited.
He didn’t find the riches he sought, but his expedition
opened up the Southeast to further exploration and ulti-
mately settlement by Europeans. And the stories penned
by the survivors of his party continue to intrigue and puzzle.

KRISTIN OHLSON’s latest book is The Soil Will Save Us: How Scientists,
Farmers and Foodies are Healing the Soil to Save the Planet. Her article
“The Best of Her Profession” appeared in the Winter 2013-14 issue of
American Archaeology.
OVER THE COURSE OF approximately two years a vacant lot in the heart of downtown Miami will be transformed into METsquare, an atrium-style complex. METsquare, according to its developers, will give Miami something it lacks and clearly needs: a downtown “social and lifestyle destination” replete with stores, restaurants, entertainment venues and residential space suggestive of New York’s Times Square District.

Archaeologists uncovering postholes on the surface of the bedrock at the METsquare lot.

The discovery of the Miami Circle in 1998 led to a political and legal battle between a developer and preservationists. Now a similar battle is taking place in Miami to determine the fate of an important site that’s related to the circle.

By Michael Bawaya

The developer, MDM, purchased this valuable parcel approximately 10 years ago. Once it’s built, the METsquare complex will be a shining example of Miami 21, an initiative that, according to the City of Miami’s website, “represents the Miami of the 21st Century” by employing “a holistic approach to land use and urban planning. It provides a clear vision for the City that is supported by specific guidelines and regulations so that future generations can reap the benefits of
The circle was part of a large Tequesta village that was likely visited by the Spanish explorer Juan Ponce de Leon, who led the first European expedition to Florida in 1513. METsquare covers the remnants of another part of that village.

Some 1,500 years ago the Tequesta were apparently engaged in their own version of urban planning, establishing a village with a residential area, an adjacent cemetery, and the nearby ceremonial circle. It’s thought that the village well-balanced neighborhoods and rich quality of life.”

The METsquare lot is one of several parcels located in what has been a moribund section of downtown that is undergoing development with the goal of bringing that area to life. But these parcels also happen to be in a City of Miami Archaeological Conservation Area. The Miami Circle, a roughly 2,000-year-old Tequesta Indian ceremonial site that was discovered in 1998 and subsequently purchased by the county and state for nearly $27 million, is a short distance away. The circle was part of a large Tequesta village that was likely visited by the Spanish explorer Juan Ponce de Leon, who led the first European expedition to Florida in 1513. METsquare covers the remnants of another part of that village.

The METsquare lot is part of the 1,500-year-old Tequesta village that is now buried under part of downtown Miami. In the far left of the picture, just across the river, is the Miami Circle, the village’s religious center. The village’s cemetery was destroyed by the building under construction in the upper right of the picture.
was then part of the shoreline, so, as hunter-gatherer life-
styles go, the Tequesta had it pretty good—seafood, marine
shells, and other essentials were within easy reach. There
could have been 1,000 people residing here according to
Bob Carr, the executive director of the Archaeological and
Historical Conservancy, Inc.

Archaeologist John Goggin discovered the remains of
the village, which he named Miami Midden 1, in 1949 when
he conducted Florida’s first archaeological inventory. The
Granada site, which is near METsquare and is also part of
the Tequesta village, was excavated by archaeologists for
the State of Florida in the 1970s. Local preservation laws
require that a cultural resource survey be conducted before
construction could begin at METsquare, and Carr, who dis-
covered and excavated the Miami Circle, was hired by MDM
to do the survey.

Carr and his team began working at other portions of
the Miami Midden 1 site that were planned for development
in 2002, and over the years they’ve discovered various com-
ponents of the village. The archaeologists have uncovered
roughly 2,000 postholes, some of which form circular fea-
tures that were dug into the bedrock, while others appear to
have linear alignments.

Carr, a sixtyish man with grey hair and goatee, has been
directing the excavation of the METsquare parcel since
2012. On a pleasant morning in mid-March a small crew
uncovered sections of the bedrock, which is made of a sedi-
mentary rock known as oolite. The Miami Midden 1 site has
been called the birthplace of Miami, but given its appear-
ance, it’s hard to believe it birthed anything. The bedrock
is pocked with the postholes and natural crevices, some of
which contain puddles. It looks desolate and strange, even
somewhat unworldly.

Samples from items found in five of those postholes
have yielded radiocarbon dates ranging from A.D. 500-1100.
Analysis of myriad other items recovered from the post-
holes will be done once the excavation concludes. With the
passing of the centuries this prehistoric village, according
to Carr and other archaeologists, evolved into downtown
Miami. “We’re seeing a level of complexity we haven’t seen
before” that suggests organized labor, said Carr. The Miami
Circle in particular shows this complexity. It’s only recently,
he observed, that archaeologists have realized how sophis-
ticated the Tequesta and other south Florida prehistoric
cultures were.

The “highly regularized posthole patterns” indicate reg-
ular house sizes according to Randolph Widmer, an archae-
ologist at the University of Houston who has worked at the
Miami Circle and is familiar with the Miami Midden 1 site.
Carr, Widmer, and other archaeologists believe the Tequesta
village consisted of “elevated wood and thatch structures”
that were probably connected by boardwalks. Posts sup-
porting the structures and boardwalks, which were raised to
avoid flooding, once filled the myriad holes.

“You don’t see the types of features associated with
houses built on the ground level,” said Widmer, noting that
standard features such as fire hearths and middens are
absent. The Tequesta didn’t have middens, Widmer surmised,
because they threw their trash in the water, instead of out
the door, and let the tide dispose of it. Though the Spanish
accounts make no mention of elevated structures, Widmer
thinks that’s because they saw houses on pilings in other
places, such as Venezuela. Having seen them elsewhere, the
Spanish didn’t remark on the Tequesta homes.

In later years, the site was also home to two incarnations
(1567–70 and 1743) of a Spanish mission; the mid-1800s U.S. Army post Fort Dallas; and the late-1800s Royal Palm Hotel, the largest hotel south of New York. Miami Midden 1 is “one of the most important sites in south Florida,” said Jeff Ransom, the Miami-Dade County archaeologist.

DESPITE THE IMPORTANCE OF the site, Carr said Miami “is fueled by growth and development.” MDM’s lawyer, Eugene Stearns, stated that the METsquare development is “critical to downtown Miami.” Consequently, to many people the METsquare dig is not merely an archaeological project: it represents a contest between the benefits of modern growth and historic preservation. This same contest played out in 1998 when the Miami Circle was discovered prior to the construction of a luxury condominium complex. That discovery led to a legal and political battle between development and preservation that, to the surprise of many, the circle won and the condo lost. That fight was long and expensive—a bloody one, so to speak—and neither side has been spoiling for another. Nobody wanted to repeat the Miami Circle drama, Stearns noted.

Yet, at least to some degree, that drama is being repeated. Because the METsquare parcel, and the entire Miami Midden 1 site, is an archaeological conservation area, Carr had to notify the city’s Historic and Environmental Preservation Board (HEPB) of any significant archaeological discoveries that he made. The HEPB, according to the city’s web site, “is charged with promoting the preservation of the City’s heritage by identifying and designating properties of major significance, and closely monitoring alterations to them.” Since being hired by MDM, Carr worked at the site on and off and made a number of significant discoveries—including uncovering a feature known as the Northeast Corner Circle in 2005—that he reported to the HEPB. Once notified, the HEPB had 60 days to review and comment on MDM’s plan to address these discoveries. But, according to Stearns, the board said nothing to MDM about changing its plans, so the developer pushed ahead.

MDM’s plan for the METsquare site was discussed during a well-attended public hearing, during which a number of people expressed their opposition. Stearns referred to them as “an angry mob.” MDM had a mitigation plan to minimize damage to the site during construction, and it hired archaeologist Christopher Dore of the University of Arizona, an expert on archaeological compliance, to review it. One aspect of the plan was to cut out one of the circular posthole features from the bedrock and display it in a nearby plaza. (A similar mitigation plan was proposed for the Miami Circle years ago.)

MDM then submitted its plan to the HEPB, and at that hearing the nine-member board rejected it by a vote of eight to one, requesting that MDM devise a new plan that preserved more of the archaeological features in place. “It was just not very well thought out,” Gerald Marston, the HEPB’s vice chairman, said of MDM’s mitigation plan. After archaeologists informed the HEPB of the importance of the site, Marston said the board’s members also discussed the possibility of getting Miami Midden 1 designated a National Historic Landmark, and even a World Heritage Site.

The 1897 Royal Palm Hotel is depicted in a mural near the METsquare lot. Archaeologists uncovered part of the foundation of the hotel while excavating the lot.

The archaeologists also discovered a well from Fort Dallas.
The HEPB “rendered a decision essentially shutting down the development,” Stearns said. Prior to this hearing, the relationships between the various parties—MDM, the archaeologists, and the HEPB—were apparently cordial. According to a March 20 Miami Herald news story, MDM then “adopted a strongly adversarial stance” toward the HEPB and the archaeologists. Stearns cross-examined Carr and other archaeologists who spoke at the hearing as if they were on trial, Marston said. “He tried to belittle the archaeological findings.” Rather than devise a new mitigation plan, MDM appealed the HEPB decision to the City Commission.

Dore said he’s “not an expert on Miami archaeology,” and that he was hired to assess MDM’s mitigation plan and not Carr’s archaeological work. But in the course of doing his job he expressed doubts about some of Carr’s conclusions. There aren’t nearly enough radiocarbon dates, he said, to prove that the 2,000 some postholes all date to the Tequesta period. He also doubted that some of the postholes supported elevated roofed structures, as Carr, Widmer, and others hypothesize. “I think everybody got caught up in this one interpretation,” said Dore. “That may not be the best conclusion to draw from the data.”

Dore’s opinion appeared to delight Stearns, who, in news articles about the project, has dismissed—at times ridiculed—Carr’s conclusions, calling them “hokum” and “garbage.” In a May 19 article in the New York Times, Stearns was quoted as saying “You have what I would say is imaginary conclusions of what was discovered.” Referring to Dore and other archaeologists, Stearns was also quoted as saying, “We brought in independent archaeologists, and they laughed.”

In fact, whatever his disagreements with Carr’s interpretation of the data, Dore was respectful of Carr’s work, saying “I think the archaeology was done well.” Ransom, who agrees with Carr’s conclusions, said there were no doubts

A drone was used to take this aerial picture of the METsquare lot at night. The circles and linear features were illuminated by glow sticks.
about the interpretation of the site before Stearns was hired to represent MDM. Ransom also noted that Dore thought the site was important enough to meet the criteria for being listed on the National Register of Historic Places. “It’s odd that the attorney working for the developer would ridicule the archaeologist working for the developer,” said Ransom.

Stearns said MDM doesn’t dispute the importance of the site; according to Stearns the archaeologists have actually “understated” its importance. Carr and his colleagues are too focused on the Tequesta period, on the birthplace of Miami scenario, to pay attention to the subsequent occupations, which are “largely unexplored,” he said. In addition to the Spanish mission and Fort Dallas, Stearns said that the site was once home to a slave plantation, and it also served as a base for post-Civil War piracy. “We say it’s differently important from what they say,” he said, adding that “many archaeologists” agree with him. When asked the names of some of those archaeologists, Stearns refused to reveal them, saying they “have no interest in waging a public war with folks who are emotionally committed to conclusions.”

THE CITY COMMISSION WAS set to hear MDM’s appeal when one of the commissioners, Marc Sarnoff, who represents downtown Miami, suggested the parties try mediation to resolve the dispute. This led to two long sessions mediated by Angel Cortinas, a former judge, whose services were paid for by MDM. On March 27 a mediated agreement was reached whereby MDM would go ahead with its plan to build the METsquare complex, but with modifications to preserve portions of the archaeological site.

The most salient of the modifications are that MDM will preserve two of the 10 circles that have been exposed by enclosing them in glass. One of them, the Northeast Corner Circle (also known as the Royal Palm Circle because of its proximity to the former hotel), will be covered by a glass floor in a gallery building and showcased with interpretative information. The Southwest Corner Circle will be housed in a glass building so that it can be seen by people walking by. A section of the Royal Palm Hotel foundation, which Carr uncovered, will also be enclosed in the gallery building. The agreement also states that MDM “will make reasonable
efforts to allow for a crawlspace below portions of the first floor of the building” so that archaeologists and historians can conduct research, and that a history museum will be built on the site.

“The developer is pleased to bring the controversy to an end” with the agreement, Stearns said. MDM has spent over three million dollars on archaeological mitigation, according to Stearns, and it could require another million to comply with the agreement. “Miami’s METsquare project compromise is historic both in archaeology and development,” said Ken Detzner, Florida’s Secretary of State. “It is a model for the successful balance of private land owners and developers working together with local and state governments in order to preserve and promote history to serve the public to the fullest.”

Carr and Ransom, who were both parties to the agreement, were not as enthusiastic about it, though Carr believes it was the best that could be done given the current economic and political situation. “I want to see as much of the site preserved as possible,” he said, but he acknowledged that possibly half the site will be destroyed. “If we get two circles, it’s better than nothing,” said Ransom. Marston thinks the agreement is “okay,” saying “there were people there who really cared and wanted to see something good done.”

University of Miami archaeologist William Pestle does not think the agreement is okay. Where Detzner and some others see a grand bargain, Pestle sees an illegal act. “There’s no provision for (the agreement) under the preservation law,” he said. “It’s a sweetheart deal for the developer.” Noting that MDM paid for the mediator’s services, he also stated that the HEPB was “gagged” and wasn’t allowed to participate in the mediation process, and “there were a hell of a lot of lawyers at that mediation panel; there were very few archaeologists.” Pestle, accompanied by several of his students, tried to attend the mediation, but was turned away. (Carr, who was one of four archaeologists who attended the mediation, said he thought the archaeological community was “adequately represented.”)

Pestle surmised all of this was because MDM has invested huge sums of money in Miami and the city didn’t “want to anger the developer.” So Pestle, seemingly eager to anger MDM, filed a lawsuit to nullify the agreement. The METsquare site “is a public resource,” and therefore the public should decide its fate. Stearns called Pestle’s lawsuit “frivolous.” Victoria Mendez, Miami’s city attorney, wouldn’t comment on the city’s response to Pestle’s lawsuit, but she said that “Mr. Pestle had the opportunity to comment at a public hearing before the city commission and chose not to.”

A FEW BLOCKS AWAY from the METsquare site is the Miami Circle. More than a decade ago its saga—facing death by development, it was saved by an alliance of politicians, preservationists, and the public—was chronicled in the national and international press. The BBC did a documentary on it. A web cam was set up so people could watch the dig on their computers. Carr, who excavated it, was catapulted from anonymous archaeologist to minor celebrity. “It hit a public nerve,” he said. Prior to its discovery people didn’t realize Miami had a history, let alone a deep one.

A fantastic amount of money and effort was spent to preserve the Miami Circle, and it was designated a National Historic Landmark in 2009. But just five years later, with its sad landscaping and limited interpretive signage, the circle, which once meant so much to so many, seems neglected, forlorn, forgotten. It’s been reduced to “a dog park,” according to Stearns. Carr said it would be better if some kind of structure had been built to cover and protect the site, but there was no money for such a thing.

Back at METsquare, Ryan Franklin, Carr’s field director, pointed to a building under construction across the street from the site. In 2005 the archaeologists found a large cemetery containing about 500 individuals there before construction began. Because of the number of burials, Franklin called it “one of the most significant prehistoric cemeteries in south Florida.” The cemetery was filled with some primary and predominantly secondary burials, the latter consisting of disarticulated remains that were piled on top of the primary
burials. The archaeologists documented, recovered, and, in cooperation with the affiliated tribes, reburied the remains in a nearby location.

MDM also owns this parcel, and there was no federal funding involved in the construction project, so NAGPRA didn’t apply. Carr said at that time the city didn’t want to spend the money required to buy the land in order to preserve the cemetery. This might seem surprising given that various government entities spent nearly $27 million to preserve the Miami Circle, and MDM, at the behest of preservationists, will spend as much as four million dollars to save part of the Miami Midden 1 site. (Another portion of the site near the building was destroyed in the 1950s, when there were no preservation laws, by the construction of a building.) There are preservation laws, and then there’s “the political climate,” Carr said, explaining that the current HEPB “is a much more preservation-oriented” than its 2005 predecessor. “Preservation is not always about the law,” he said, “but rather the implementation of the law and who is doing the implementing.”

While admitting he’s not well versed in Miami’s preservation laws, Dore’s impression is “there’s a problem in the process” of reviewing archaeological sites. It would have been much better if the importance of the Miami Midden 1 site had been revealed prior to the destructive process of excavation, rather than as a result of it, he said. Because of this, ironically, “the argument was about preservation” even though part of the site “was already destroyed.”

Development and historic preservation are old foes that confront each other every day everywhere, though rarely, Dore said, with the drama seen in Miami. He agreed with Pestle that preservation decisions should be made by the public rather than experts or politicians. Whether or not Pestle’s lawsuit is deemed to be “frivolous” in the legal sense, the issue that inspired it is anything but. In Miami, as in every corner of the country, this confrontation demands that we make a choice. As Pestle said, “We value our history over another condominium building…or we don’t.”

MICHAEL BAWAYA is the editor of American Archaeology.
For decades the exact location of Catechna, an 18th-century Tuscarora settlement, eluded historians and scholars who relied on historical documents to find the site. Conflicting information and differing interpretations of historical maps had led them to conclude the site could be in entirely different locations.

In the mid 1990s John E. Byrd and Charles L. Heath of East Carolina University conducted a survey of the Tuscarora homeland in the Contentnea Creek drainage of North Carolina’s Inner Coastal Plain. As part of this project they excavated a site called Koon’s Landing, which yielded a variety of cultural material including a Guilford projectile point and other lithic items, fire-cracked rock, and charcoal. Byrd and Heath also found Cashie-phase pottery sherds. Archaeologists define the Cashie phase as the Tuscaroran occupation of the Inner Coastal Plain of North Carolina during the Late Woodland and Contact periods. These discoveries led them to surmise Koon’s Landing could be part of Catechna.

During the time of the initial colonization of North Carolina by the Europeans, the Tuscarora were the most populous and powerful Native American group in the Coastal Plain. The expansion of the European occupation led to conflict. According to historical documents, Catechna was a major center during the Tuscarora’s war with the colony of North Carolina. Chief Hancock, one of the Tuscarora’s leaders in this conflict, resided there. Christoph von Graffenreid, the leader of the nearby town of New Bern, and John Lawson, the Surveyor General of North Carolina, were taken prisoner there in 1711, and Lawson was executed. In 1712 the town was attacked by Colonel John Barnwell and his militia, and after a 10-day siege the Tuscarora surrendered.

In his account of his imprisonment, Von Graffenreid noted that the community had a centralized plaza for important activities, and that the dwellings were dispersed. Byrd and Heath suggest that rather than being a centralized village, it is more likely that Catechna consisted of a collection of plantations and nucleated villages and homesteads, as is consistent with Tuscarora settlement patterns. The archaeologists believe Koon’s Landing is one of several sites that could be Catechna, and of those sites—some of which have been disturbed or destroyed by development—Koon’s appears to be the best preserved.

In 2007, the Conservancy acquired the Contentnea Creek site, which also contains an 18th century Tuscarora settlement. —Andy Stout

The Conservancy acquires a second Tuscarora village site

The Koon’s Landing site is believed to contain portions of an 18th-century Tuscarora village.

Cashie pottery sherds and projectile points recovered from the site.
The Conservancy is acquiring the first of three tracts of an important site near the city of Tallahassee, in northwest Florida. The Bird Hammock site is a multi-component site consisting of two burial mounds and two circular or ring-shaped middens consisting primarily of plant and animal food refuse. The site's primary occupations were the peoples of the Swift Creek and Weeden Island cultures. These cultures inhabited parts of Florida, Alabama, and Georgia, and they are known for their elaborate ceremonial complexes, mound burials, permanent settlements, extensive trade networks, and sociopolitical complexity.

One burial mound and one ring dates to the Swift Creek period (ca. A.D. 1–700), and the other mound and ring dates to the Weeden Island period (ca. A.D. 700–1200). The two mounds were excavated by Clarence B. Moore in 1902. Moore, a wealthy Philadelphian who, for 30 years at the turn of the last century, excavated the Native American burial mounds along the Southeast

Understanding A Cultural Transition

The acquisition of part of the Bird Hammock site could help archaeologists understand the transition from the Swift Creek to the Weeden Island cultures in Florida.

A reconstructed pot recovered from the Swift Creek burial mound.
rivers and coasts, contributing the pottery and skeletons to half a dozen museums in the Northeast. Although he nearly always claimed to have dug the mounds “down completely,” his work has been proven time and again to have been anything but complete. Valuable historic and scientific data remain to be obtained from most of his mounds, and that’s not to mention their cultural value to Native Americans. Much of the two mounds at Bird Hammock still exist, either in situ or as spoil, and the village sites are in excellent condition.

For years, archaeologists have struggled to understand the transition from the Swift Creek to the Weeden Island cultures in the region. Were the Weeden Islanders the descendants of Swift Creek people, or were they a different group that brought new ideas to the Swift Creek? The main differences between the archaeological cultures lie mainly in their pottery. The Swift Creek people used complicated techniques to embellish their wares. Taking a paddle carved with decorations, they would stamp or press the paddle onto a vessel before it was fired, thereby impressing the decoration on the vessel.

Weeden Island people relied on incising, punctating, and painting to decorate their pottery. Archaeologists consider Weeden Island pottery to be the more artistic of the two styles. Its various and elaborate effigy forms were created strictly for use in funerary rites related to burial mounds, whereas the types of pottery in Swift Creek burial mounds is the same everyday ware used in more mundane contexts.

Recently obtained evidence indicates that Weeden Island ringed villages were much larger than Swift Creek villages, suggesting they housed more people. But whether this was a result of natural growth or the assimilation of people from outside the region remains a question. Keeping this in mind, National Park Service archaeologists Mike Russo and Jeff Shanks recently began an effort to create a more detailed and current map of the site. This is no easy task, given the large size of the site and its heavy vegetation. But Russo thinks the Bird Hammock site has the potential to answer this question. The acquisition of the first tract of Bird Hammock is the first step in the preservation of a site that may very well write a page in the prehistory of Florida. —Jessica Crawford

The Protect Our Irreplaceable National Treasures (POINT) program was designed to save significant sites that are in immediate danger of destruction.
SOUTHWEST—Over 192 acres at the Adelbert Doyle Smith Family archaeological preserve was systematically surveyed by noted rock art specialist Steve Manning and his wife Elna from the Utah Archaeological Research Institute. The Smith Family preserve, which is located near Provo, Utah, was donated to the Conservancy early this year and the extent of the site’s cultural resources was then unknown.

The Mannings battled rain and sustained winds up to 80 miles per hour as they recorded the locations of over 200 glyphs. They also found a large distribution of chipped stone artifacts. This shows that there may have been people living near the petroglyphs, perhaps even the artists that created them.

Due to their patination, which is evidence of their exposure to the elements over time, the Mannings feel that some of the petroglyphs could be 12,000 to 13,000 years old, while others are roughly 500 years old. Patination forms when airborne microorganisms metabolize and oxidize manganese and iron minerals that leach from, and are deposited on, the stone’s surface. The process is very slow and rock varnish takes considerable time to develop. When a petroglyph is pecked or carved through the patina on a rock surface, it exposes the lighter colored interior stone. After the petroglyph is made, the newly exposed surface gradually begins to reacquire the rock varnish. After a long period the image will be totally repatinated and it will have essentially the same patina as the unaltered rock face.

This petroglyph is so old its image has the same patina as the rock face.
Carhart Pueblo Stabilized

SOUTHWEST—Carhart Pueblo has the northernmost Chaco-period great house in the San Juan region of the Four Corners. Ceramic dates and dendrochronology indicate that it was established during the early Mancos phase (A.D. 1040-1120). It was acquired by the Conservancy in late December of 2012 and, with the help of a grant from the National Trust Preservation Fund, the exposed kiva was stabilized, backfilled and fenced the following summer.

The kiva and great house were covered with water-permeable geotextile material that creates a physical barrier so future archaeologists know that everything below the geotextile material represents an undisturbed surface. High-fired ceramic tiles were also placed on top of the geotextile material prior to it being backfilled. In 500 or 1,000 years from now the geotextile material may not survive, but the ceramics will most likely be preserved.

The fill material was taken from a portion of the property that was carefully analyzed and determined to be void of any cultural material. Each bucket-load of fill that was removed from the field was monitored by an archaeologist.

The Conservancy’s fencing meets wildlife-friendly specifications developed by the Colorado Division of Wildlife. The fences are no more than 42-inches high and the wires are spaced so that an animal jumping the fence isn’t likely to get its leg snagged. The bottom wire is smooth and high enough that fawns or other juvenile animals can safely crawl under with minimal risk.

Sourcing Hotchkiss Mound Obsidian

WEST—Last June, archaeologist Jelmer Eerkens with the University of California, Davis, analyzed artifacts recovered from the Conservancy’s Hotchkiss Mound Preserve located in California’s Bay Area. One focus of this project was to identify and source nearly 200 obsidian artifacts in order to explore regional trade networks.

The place of origin of these artifacts was determined through x-ray fluorescence (XRF) analysis, a geochemical process used to source obsidian. Almost all of the obsidian Eerkens collected was traced to the Napa Valley, the closest obsidian source to Hotchkiss Mound. Roughly five percent of the obsidian consisted of small pressure flakes that XRF can’t reliably analyze; consequently, Eerkens plans to use an alternative technique called Neutron Activation Analysis to identify the source of these items.

Last spring, Andrew Scott, a student of Eerkens, presented a poster at a conference summarizing the preliminary XRF analysis. Scott noted that from roughly 4,500 to 2,500 years ago people living in what is now the Bay Area were acquiring a large amount of their obsidian from sources in eastern California. But by 700 years ago they were getting nearly all of their obsidian from the Napa Valley. Scott wants to test obsidian samples from other nearby archaeological sites that were occupied during the intervening period of 2,500 to 700 years ago to better assess this dramatic shift in prehistoric trade patterns.
From These Honored Dead: Historical Archaeology of the American Civil War
Edited by Clarence R. Geier, Douglas D. Scott, and Lawrence E. Babits
(University Press of Florida, 2014; 336 pgs., illus., $40 cloth; www.upf.com)

One hundred and fifty years after Lee’s surrender, archaeologists using the latest technology are adding important new insights to the American Civil War story that has been too often told by unreliable eyewitness accounts. In this thoroughly absorbing collection of essays, a group of seasoned historical archaeologists explore new directions for examining America’s most devastating war. Their scientific approach to the material remains of the war adds mountains of new information that often buries the myths that abound. Battlegrounds and camps in Virginia, Kentucky, Texas, Missouri, Florida, and South Carolina are explored illustrating the character of the conflict. The inclusion of sites in the trans-Mississippi West (Missouri-Kansas border region) gives attention to an area often ignored in conventional histories of the war. In fact, the war really started there in 1856 with Bloody Kansas and continued until the hostilities ceased in Virginia.

The 16 essays focus on three central themes: 1) battlefield landscapes on land and sea; 2) logistical support and the life of the common soldier; 3) miscellaneous studies including military defense and artifact collections. Archaeological field methods are described that show how modern technologies can be applied to battlefield archaeology. Some of those techniques include remote sensing using magnetometers and ground-penetrating radar. Systematic, scientific metal detector surveys are particularly effective in tracing the course of battle. Sometimes scorned by professional archaeologists because of their use by looters, metal detector surveys have proven to be very effective in mapping military engagements and campsites. Of course more traditional archaeological excavations are needed to recover larger items and verify remote-sensing finds.

From These Honored Dead is an important addition to the growing field of conflict archaeology. Despite the thousands of histories of the Civil War, it aptly illustrates that archaeologists have much to contribute before the whole story is told.

New Lives for Ancient and Extinct Crops
Edited by Paul Minis
(University of Arizona Press, 2014; 288 pgs., illus., $65 cloth; www.uapress.arizona.edu)

Modern agriculture is bringing about the dramatic narrowing of food species throughout the world. Crops that were domesticated and developed by farmers over thousands of years into tens of thousands of varieties are now in rapid decline. In this volume, nine of the nation’s leading ethnobotanists examine the development of nine plant species over time as reflected in the archaeological record. Each scholar illustrates how the ancient record can inform the present as to the value of primordial plants.

They examine the dynamic history of farming tracing the development of specialized varieties of foods over thousands of years. These specialized plants, many found only in archaeological sites today, played an important role in human development, and they may play that role again as diversity diminishes. By looking closely at nine species, we get a preview of what may be available. Those species—maygrass, chenopod, marshelder, agave, little barley, chia, arrowroot, little millet, and bitter vetch—were important parts of human diets and had medicinal uses as well. The authors indicate that extinct crops might even be re-domesticated from their wild progenitors using information gleaned from archaeological research.
Arrows and Atlats: A Guide to the Archaeology of Beringia
By E. James Dixon
(National Park Service, 2013; 321 pgs., illus.; free from the National Park Service, Alaska Region)

Noted Arctic archaeologist James Dixon has produced the first comprehensive survey of the very important archaeology of Beringia, the area from the Verkhoyansk Range in Siberia to Alaska and the Northwest Coast, including the Aleutian Islands and the Bering Land Bridge. Most archaeologists believe Beringia played a critical role in the human colonization of the Americas, serving as a corridor for migration from Asia to America sometime between 17,000 and 14,000 years ago. For more than 10,000 years it was the only link between America and Asia, and people and ideas went both ways.

For the past 100 years archaeologists and Alaska Natives have developed an important body of work that provides new insights into the lives, art, beliefs, and economy of ancient Beringia. Drawing on this work, Dixon has produced an impressive guide to an amazing part of the world. A section on Arctic archaeologists is a fascinating addition. Arrows and Atlats is well written for the general public and is liberally illustrated with maps, drawings, and photographs of the region and the artifacts it is producing. It is a must read for anyone with an interest in Beringia and the first Americans.

Clovis Caches: Recent Discoveries and New Research
Edited by Bruce B. Huckell and J. David Kilby
(University of New Mexico Press, 2014; 264 pgs., illus., $75 cloth; www.unmpress.com)

About 13,500 years ago, near the end of the last Ice Age, the Clovis people of North America developed distinctive fluted-stone spear points and other tools that allowed them to dominate the continent for 1,000 years. They are named after the eastern New Mexico town near the site where their artifacts were first identified. Often thought of as the ultimate Paleo-Indian big game hunters, the Clovis people in as little as three centuries spread from southern Canada to Panama and from sea to sea, slaughtering bison, mammoths, and mastodons.

Fifty years ago, archaeologists identified a cache of Clovis stone tools at a locale in southern Idaho, the Simon site. Described as “an extraordinary collection of chipped stone artifacts,” the Simon cache contained five fluted points, 20 bifaces, and four other items. That same year (1963), another cache containing 27 tools was discovered at Blackwater Draw, the original Clovis site. Both sites were revealed by heavy equipment operations.

Since the 1960s 23 caches of Clovis stone tools have been identified on the central and northern Great Plains. The largest had 165 tools. All of them were disturbed by modern human activity (heavy equipment operations, farming, landscaping), thus stratigraphic information is typically poor. Some were discovered years ago and not recognized as Clovis caches until recently, making their study even more difficult.

Archaeologists can now add the information of Clovis lithic technology from the caches to that from camp and kill sites. The caches also provide invaluable understanding of Clovis land use strategies by telling us what materials were most important to people who traveled great distances in a difficult environment.

In Clovis Caches, 12 stimulating essays describe the caches and what they have to tell us about one of North America’s earliest and most enigmatic cultures. Well illustrated and well organized, it gives important insights to a fascinating subject. —Mark Michel
Peoples of the Mississippi Valley

When: October 11 – 18, 2014  
Where: Tennessee, Arkansas, Louisiana, and Mississippi  
How Much: $1,895 ($300 single supplement)

Beginning in Memphis and following the Mississippi River south to Natchez, our week-long journey takes you from ancient earthen mounds to Civil War battlefields, covering more than 5,000 years of history in the process. The trip offers an exciting opportunity to learn more about the rich and complex mound-builder cultures that flourished along the Mississippi River Valley until the arrival of the Europeans.

While taking in the charms of the Old South, we’ll visit many important sites, including Emerald Mound, the third-largest Mississippian mound in the United States. We’ll also visit sites from historic times, including the Grand Village of the Natchez and the Civil War battlefield at Vicksburg. Several of the Conservancy’s preserves, such as Watson Brake Mounds, which may be the oldest mound site in North America, are also featured on the tour.

Belize and Tikal

When: January 4 – 14, 2015  
Where: Belize and Guatemala  
How Much: $3,095 per person ($450 single supplement)

Our tour begins on the coast of Belize, where we’ll tour Belize City, see Altun Ha and take a boat ride up the New River to Lamanai, a Maya trading center established before Christ and occupied until A.D. 1641. From the coast we’ll travel to the inner reaches of the country and explore the splendid mountaintop palace of Cahal Pech.

A ferry ride will take us to the ruins of Xunantunich, once an important trading center. There we’ll tour El Castillo, a classic example of the Maya technique of constructing a pyramid over an older pyramid. From Xunantunich we’ll visit the recently excavated ceremonial site of Caracol, the largest Maya site in Belize. We’ll also visit Yaxhá, a city 19 miles southeast of Tikal that features an impressive series of plazas and platform groups. At Tikal, we’ll spend two days exploring one of the most magnificent Maya centers situated in the Petén rain forest. Thought to have had a population exceeding 75,000, Tikal once spanned an area of more than 25 square miles. John Henderson, a leading scholar on the cultures of Mesoamerica, will lead the tour.
Maya of Chiapas and Tabasco

When: March 25 – April 4, 2015
Where: Mexico
How Much: $3,095 ($450 single supplement)

This tour takes us to some of the more out-of-the-way but spectacular Maya ruins in southern Mexico that flourished between A.D. 300 and 900. We begin in the tropical lowlands and end in the fabulous highlands of Chiapas among the modern Maya people. We’ll see tremendous pyramids, unbelievable sculptures and murals, and modern arts and crafts.

We begin our adventure with a visit to the major Olmec site of La Venta, with its great earthen pyramid. We will then visit Comalcalco, Palenque, Bonampak, and Yaxchilán. Then we leave the tropical lowlands for a long climb into the Chiapas mountains to the large Maya center of Toniná. The site is dominated by its acropolis, which rises in terraces and buildings some 233 feet up the side of a steep hill. We’ll continue climbing to reach the colonial-Indian town of San Cristóbal de las Casas, where we’ll spend two nights. We’ll then visit the charming Tzotzil Maya villages of San Juan Chamula and Zinacantán. Our guide will be the noted Maya scholar John Henderson of Cornell University.
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